THE STRUCTURE OF SOCIAL INTELLIGENCE

By

HERBERT A. MARLOWE, JR.

A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1984

Copyright 1984

by
Herbert A. Marlowe, Jr.

DEDICATION

To Earl Kilgore,
who raised the possibility

To Bob Stripling,
who helped me start

To Bert Sharp,
who helped me finish

and

Jeanie,
without whom it would have never happened

ACKNOWLEDGEMENTS

The production of a dissertation is the result of the cooperation and efforts of a number of persons. In particular I would like to thank the staff of the State of Florida mental health facilities system for their participation as respondents in this study. Statistical consultation and assistance have been provided chiefly by Mr. Hardy Hall with consultation also provided by Dr. Peter Vagg, Dr. Richard Weinberg, and Mr. Mark Prange. The typing and corrections of the dissertation have been chiefly done by Ms. Donna Nelson with assistance from Mrs. Flor Rodriguez and Ms. Jeannette Rodriguez. Mrs. Hedi Willemse has assisted me in the duplication and compiling of the dissertation. Mr. Hector Rodriguez has provided graphic support. My supervisors during this period, Dr. Jeffrey Bedell, Mr. James Doyle and Dr. Paul d'Oronzio, have continuously encouraged this work. My children, Louisa and Jordan, and my parents have supported me throughout this period. Finally, of course, my committee, Drs. Ben Barger and Larry Loesch, and especially its chair, Dr. Bert Sharp, has guided me through this process. To each of these, as well as any I have inadvertently overlooked, I give my thanks.

TABLE OF CONTENTS

		Page
ACKNOWLEDGMENTS		iv
LIST OF TABLES		vii
LIST OF FIGURES		x
ABSTRACT		xi
Chapter		
I	INTRODUCTION	1
	Statement of the Problem	4
	Purpose	9
	Need	11
	Significance of the Study	13
	Definitions of Terms	14
	Research Questions	18
	Organization of the Study	19
II	REVIEW OF THE RELATED LITERATURE	20
	Models of Social Intelligence	20
	An Hypothesized Partial Model of Social Competence	27
	Empirical Evidence for the Hypothesized Model	29
	The Relationship of Gender Identity and Social Competence	57
III	METHOD OF STUDY	71
	Research Design	71
	Research Questions	72
	Population	72
	Instrumentation	74
	Procedures for Data Collection	86
	Procedures for Data Analysis	90
	Limitations of the Study	95
IV	RESULTS	97
	Characteristics of Participants	97
	Results of the First Question	111
	Results of the Second Question	135
	Results of the Third Question	139
	Results of the Fourth Question	150

Table of Contents (Continued)

		Page
V	DISCUSSION	160
	Discussion of the First Question	160
	Discussion of the Second Question	168
	Discussion of the Third Question	170
	Discussion of the Fourth Question	172
	Concluding Discussion	174
APPENDICES		
1	DEMOGRAPHIC QUESTIONNAIRE	180
2	CONSENT FORM	182
3	SCORING ROUTINES	184
4	MEANS, STANDARD DEVIATIONS AND T-TESTS OF SOCIAL INTELLIGENCE MEASURES FOR VARIOUS SAMPLES BY SEX	194
5	FIRST ORDER FACTOR ANALYSIS OF INDEPENDENT VARIABLES	196
6	CRONBACH ALPHA RELIABILITIES OF FIRST- AND SECOND-ORDER FACTORS	233
REFERENCES		234
BIOGRAPHICAL SKETCH		250

LIST OF TABLES

Table		Page
1.	Comparison of TSBI Whole and Partial Correlations with Social Intelligence Measures	40
2.	Whole and Partial Correlations of the PDA with Other Measures of Social Intelligence	49
3.	Demographic Characteristics of Subjects	99
4.	Comparisons of Sample Means and Standard Deviations of Population Under Study With Those of Other Samples	101
5.	Second Order Factor Analysis: Factor Structure With Loadings	113
6.	Items for SOCIQ FACTOR 1: Prosocial Attitude	116
7.	Items for SOCIQ FACTOR 2: Social Skills	120
8.	Items for SOCIQ FACTOR 3: Social Cognition	122
9.	Items for SOCIQ FACTOR 4: Emotionality	124
10.	Items for SOCIQ FACTOR 5: Social Anxiety	126
11.	Cluster Means	130
12.	Analysis of Variance: Clusters by Social Intelligence Domains	132
13.	Chi-Square Analysis of Cluster Groups by Demographic Characteristics	134
14.	Correlation Matrix: Social Intelligence Domains and Social Maturity Index	136
15.	Regression of SMI on Social Intelligence Domains	137
16.	Factor Analysis (Rotated): General and Social Intelligence Measures	140

17. Unrotated Factor Matrix: General and Social Intelligence Measures.....141

18. Correlation Matrix (Zero Order): Social and General Intelligence Measures.....144

19. Correlation Matrix: Social Intelligence Measures, Shipley Verbal Partialled Out.....146

20. Correlation Matrix: Social Intelligence Measures, Shipley Abstract Partialled Out.....147

21. Comparison of SMI Regressions on Prosocial Attitude and Emotionality With and Without General Intelligence Measures.....148

22. Multiple Correlations and Partial Correlation Matrix: SMI, Prosocial Attitude and Emotionality Variables with Shipley Verbal and Abstract Partialed Out.....149

23. Correlation Matrix: Continuous Gender Identity Measures and Social Intelligence Domains.....152

24. Comparison of Multiple R's and R^2's for Regression Equations With and Without Androgyny.....153

25. Gender Identity by Social Intelligence Domains: One-Way Analysis of Variance.....155

26. T-Tests: Gender Identity Categories by Social Intelligence Domains.....158

27. Chi-Square Analysis: Gender Identity Category Percent by Clusters.....159

28. Social Intelligence Measures: Male Means and Standard Deviations Compared to Other Samples.....194

29. Social Intelligence Measures: Female Means and Standard Deviations Compared to Other Samples.....195

30. Social Interest Index: Rotated Factor Matrix.....200

31. Social Interest Index: Unrotated Factor Matrix For Three Factor Solution.....204

32. Texas Social Behavior Inventory: Factor Analysis Matrix.....207

33. Texas Social Behavior Inventory: Unrotated Factor Matrix For Two Factor Solution.....210

34. Social Self-Efficacy Scale: Rotated Factor Matrix...211

35. Social Self-Efficacy Scale: Unrotated Factor Matrix for Two Factor Solution.....213

36. Interpersonal Reactivity Index: Rotated Factor Matrix, Two Factor Solution.....215

37. Interpersonal Reactivity Index: Unrotated Factor Matrix, Two Factor Solution.....219

38. Perceived Decoding Ability Scale: Rotated Factor Matrix, Three Factor Solution.....220

39. Perceived Decoding Ability Scale: Unrotated Factor Matrix, Three Factor Solution.....224

40. Social Skills Survey--Peer: Rotated Factor Matrix, Three Factor Solution.....226

41. Social Skills Survey--Peer: Unrotated Factor Matrix, Three Factor Solution.....228

42. Perceived Encoding Ability Scale: Rotated Factor Matrix, Two Factor Solution.....229

43. Perceiving Encoding Ability Scale: Unrotated Factor Matrix, Two Factor Solution.....231

44. Cronbach Alpha Reliabilities of First- and Second-Order Factors.....233

LIST OF FIGURES

Figure		Page
1.	Components of Gender Identity	16
2.	Second Order Factor Analysis; Scree Test	115
3.	Cluster Pattern of Social Intelligence Domains	131
4.	Factor Plots: General and Social Intelligence Variables	143

Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

THE STRUCTURE OF SOCIAL INTELLIGENCE

By

Herbert A. Marlowe, Jr.

April, 1984

Chairman: Bert L. Sharp, Ed.D.
Major Department: Counselor Education

Social intelligence has been hypothesized as a distinct form of intelligence for over sixty years. Only recently have studies supported this thesis. In addition to these studies other data indicate that it is multidimensional. This study investigated the multidimensionality of social intelligence as well as its construct validity.

From the literature four domains of social intelligence were hypothesized: social interest, social self-efficacy, social cognition and behavioral repertoire. This study proposed to empirically derive these domains, establish their divergent validity via a comparison to measures of verbal and quantitative intelligence, and their convergent validity via comparison to

measures of social effectiveness. Four research questions were posed: (1) what is the internal structure of social intelligence; (2) what is the relationship of social intelligence to social maturity; (3) what is the relationship of social intelligence to general intelligence; and (4) what is the relationship of social intelligence to a personality trait associated with social competence, i.e., androgyny.

One hundred eighty-six public mental hospital employees comprised the sample. The population was predominantly composed of female and minority group persons. These demographic characteristics are representative of the occupational groups from which the sample was drawn. It was normally distributed on other demographic criteria.

Participants completed eight social intelligence measures, the Shipley-Hartford Intelligence Test, the Bem Sex Role Inventory, the Social Maturity Index and a demographic questionnaire.

The structure of social intelligence was investigated through factor analytic studies of the social intelligence measures. This study resulted in the identification of five domains: prosocial interest, social skill, empathy skill, emotionality, and social anxiety.

Correlational and factor analysis of these domains and the Shipley scores indicated that social intelligence is independent.

A regression analysis indicated that prosocial interest and emotionality were the primary contributors to social maturity. Correlational analysis indicated moderate relationships among three domains--prosocial attitude, emotionality and social anxiety--and the gender identity categories--masculinity, femininity and androgyny.

The hypothesis that social intelligence is an independent, multidimensional construct was supported. Its relationship to personality measures theoretically indicative of social effectiveness was minimal to moderate. Future studies should further address the convergent validity of the construct, its relationship to indicators of social effectiveness and its role as a moderator of interpersonal stressors.

CHAPTER I
INTRODUCTION

> Humans have evolved for 300,000 years and suddenly the planet is reaching the limits of its ability to provide for burgeoning population and increasing per capita demands. . . .
>
> One thing seems clear: getting through this stressful time is not going to depend on any technological advance--an improved antimissile system, better computers and communications, free energy or a cure for cancer.
>
> It will depend on using our brains to get along better with one another and our globe. (McReady, 1982, p. 69)

"Getting along with one another" is a functional definition of the nature of the construct called social intelligence or social competence. Much of humanity's history, as found in the historians' accounts of wars and conflicts, and much of contemporary life, as illustrated by newspaper headlines or the evening news, is a commentary on our inability to get along with one another. While the consequences of this problem may be dramatized by reference to great historical or contemporary events and to the basic issue of humankind's survival, this lack of social competence evidences itself also in our everyday lives.

The development of social or interpersonal intelligence is a prime concern of counselor educators as reflected by their

emphasis on psycho-educational and primary prevention interventions (Coyne, 1982; DeBoer & Hayes, 1982). Many of the newer counseling interventions are directed toward increasing the client's level of social competence (Alpert & Rosenfield, 1981; Goodyear & Ribovits, 1982).

The need for such forms of counselor intervention is illustrated by several research studies. A survey of 2,500 American college students found that 62 percent reported shyness to have been a significant problem, with 42 percent reporting current problems with shyness (Zimbardo, 1977). In a similar vein, a survey of ten percent of Oxford undergraduates found forty-two percent of the first year students reported moderate to great social difficulties (Bryant & Trower, 1974). Based on his review of various surveys Argyle (1981) estimated that at least seven percent of the normal adult population has fairly serious difficulties with social behavior with the problem being magnified in disturbed populations. For example twenty-eight percent of a neurotic sample has been classed as socially inadequate (Bryant, Trower, Yardley, Urbieta & Letemendia, 1976). The extent of social inadequacy in psychiatric populations is so problematic that Argyle (1981) states that "psychotics are all deficient in social competence" (p. 265). The importance of social intelligence is further signified by the call for social

competence to replace verbal and quantitative intelligence as the measure of success of early childhood intervention programs (Zigler & Trickett, 1978). The development of social intelligence is therefore an issue of major significance and scope.

The theoretical significance of social intelligence for counselors is also important. Ford (1982) argues that "the concept of competence has the potential to become a very useful organizational tool in the field of mental health. It is broad in scope, subsuming a number of referents that represent the core of positive human functioning and development" (p. 1). Wine (1981) points out that competence models form the foundation of theory and research in community, counseling, developmental, educational, and cognitive psychology. Bloom (1977) argues that "of all concepts that have been introduced to link individual problems to characteristics of the social system, the most compelling have been the concepts of competence and competence building" (p. 250). For these reasons the concept of competence has experienced an exponential rate of growth in attention and study over the last five to ten years (Garmezy, Masten, Nordstrom & Ferrarese, 1979). Yet, as Ford (1982) points out, the potential utility of the competence construct is limited by conceptual imprecision. This problem must be resolved before

further recommendations for research and practice can be made.

If counselors and counselor educators are to expand and refine their use of such interventions as assertiveness training or listening skills training, further clarity about the social intelligence construct is needed.

Statement of the Problem

The social intelligence construct is currently limited by conceptual confusion and conflicting data. A firmer theoretical base is needed if counseling interventions aimed at social competence development are to be of increased value.

The construct of social intelligence was proposed in 1920 by Thorndike. Early attempts to measure individual differences in the construct did not prove to be very successful. Factor analysis of the tests that had been designed to measure different aspects of social intelligence (e.g. Moss, Hunt, Omwake, & Ronning, 1927) showed that they were heavily loaded with verbal and memory-ability variances, with little evidence of any unique variance that could be identified as "social intelligence" (Thorndike, 1936). Strickler (1982) reports that many of the later tests suffer from this same problem, i.e., a substantial overlap with general intellectual ability.

The major failing by researchers studying the social intelligence construct has been their inability to establish its

distinctiveness from general intelligence. A recent group of studies have improved on the methodological problems of earlier studies and offer support for the independence of the construct.

Keating (1978), in the original study of this group, investigated the empirical coherence of the social intelligence domain. To determine this Keating utilized three measures of social intelligence: the Defining Issues Test (DIT), the Social Insight Test (SIT), and the Social Maturity Index (SMI). General intelligence was measured by the Concept Mastery Test (CMT), the Standard Progressive Matrices (SPM), and the Remote Associates Test (RAT). Subjects for the study were 117 college students.

Keating first attempted to establish the coherence of the social intelligence domain through a convergent-discriminant analysis. This analysis would determine if within-domain measures correlate more strongly with each other than their average intercorrelation with measures outside the domain. The second analysis was a factor analysis to determine if the social intelligence measures load on a factor or factors which differ from the cognitive ability factor or factors. The third analysis was criterion prediction. This analysis would answer the question of whether social intelligence measures were better than academic measures in predicting social maturity or competent social functioning.

In terms of the first analysis, within-domain correlations were not found to be higher than between-domain correlations, r = .16 (within), r = .23 (between). In terms of the factor analysis two factors were identified but neither was a social intelligence factor. For the criterion prediction validation the SMI was used as the criterion variable. While a multiple regression of the other variables indicated that the academic measures accounted for only a small proportion of the variance, R = .28 or eight percent, neither of the two measures of social intelligence, the DIT or SIT, were selected in the equation. Furthermore the correlation of the DIT and SIT with the SMI was low and nonsignificant, r = .11, r = .09 ns respectively.

Keating's study clearly did not support the existence of a coherent social intelligence domain. However, as noted above the academic measures accounted for only eight percent of the social maturity variance. Keating in his discussion also raises the possibility that the format of the social intelligence measures, in particular the SIT and DIT, activated an academic set. Both of these tests require high verbal skills. Therefore the question of instrument bias must be carefully examined.

Based on Keating's explanation, Marlowe and Bedell (1982) investigated further the independence of the social intelligence construct. As their measure of social intelligence they utilized the Minnesota Multiphasic Personality Inventory (MMPI) Social

Introversion (Si) subscale. Of significance to their study was the fact that the Si scale had been found to be equivalent to a behavioral role-play as a predictor of social skill (Williams, 1981). Also, its true-false format minimized the need for academic ability.

To determine the relationship of social intelligence and general intelligence Marlowe and Bedell correlated the Si scores with Shipley-Hartford abstract and verbal intelligence scores in a sample of 479 adult psychiatric clients. They found nonsignificant correlations, $r = -.003$ and $r = -.009$ respectively.

Based on these results Marlowe and Bedell argued that a separate factor of social intelligence does exist but that it may be masked by assessments relying on reading, writing and other academic abilities.

The third study addressing this question was conducted by Ford and Tisak (1983). Following Keating's experimental design they used four measures of academic intelligence and six measures of social intelligence. Unlike Keating who conceptualized social intelligence in terms of social cognition, Ford and Tisak, as Marlowe and Bedell, conceptualized social intelligence as effective social performance. Ford and Tisak's measures of social intelligence therefore were selected to measure social performance.

Based on a sample of 620 high school students, their results were dramatically different from Keating's. In terms of convergent-discriminant validity they found the social intelligence within-domain correlations of their two samples to be larger, r = .36 and r = .33 respectively, than the between-domain correlations of the academic measures, r =.26 and r = .21 respectively. While these differences in the correlations are not large, they do lend support to the construct and demonstrate an opposite pattern from Keating's results. Furthermore Ford and Tisak point out that since teacher ratings were a measure in each of the domains, overlap and correlation inflation were possible. To test this possibility teacher ratings were omitted and the correlations recalculated. In the recalculated correlations the difference between within-domain and between-domain correlations increased.

In addition the factor analysis resulted in identification of a social intelligence factor. For criterion prediction an interview measure of social competence was used. The first four variables in the regression equation were social intelligence variables which accounted for a substantial proportion of the variance, thirty-one percent. The remaining variables could only account for an additional one percent of the variance.

From these studies it strongly appears that social intelligence is a separate construct. In the past it has been

merged with general intelligence because of the types of measures used and the operational definition of the construct. When social intelligence is defined in terms of social effectiveness and measured by instruments not confounded with academic ability requirements, the construct is distinct and identifiable.

The current research supports a separate social intelligence construct. The next step is to identify the components of social intelligence and then to determine if these components are independent of general intelligence. If the problem of conceptual imprecision in the social competence construct is going to be resolved these issues need to be addressed (Ford, 1982).

Another issue to be addressed in model development is the question of the contribution which the personality characteristic of gender identity makes to variance in social intelligence. The construct of gender identity appears to be strongly related to social competence (Ford, 1983). Furthermore it has been related to psychological health (Bem, 1977). Because of its potential linkage and explanatory power, its relationship to social intelligence is in need of further study.

Purpose

This purpose of this study is to develop and empirically validate or disconfirm an hypothesized partial model of social intelligence. Social intelligence is conceptualized in this

model as a construct consisting of multiple dimensions. O'Sullivan and Guilford (1975) have argued that there are a number of different ways of being socially intelligent. Gerdeman (1975) also argued that social intelligence is a multi-faceted construct. The model construction approach taken here follows after the modeling approach of Shavelson and his colleagues (Shavelson & Bolus, 1982; Shavelson, Hubner & Stanton, 1976) who constructed a multifaceted and hierarchical self-concept model; i.e., general self-concept is divided into academic and nonacademic components, and these are further divided into more specific self-concepts. Starting from this approach social intelligence is hypothesized to be composed of two major categories: social competence and social performance. Within the category of social competence three dimensions or domains are hypothesized: social interest, social self-efficacy, and social skill. Social interest is defined as a motivational construct encompassing social goals. Social self-efficacy is construed as a person's sense of self-confidence or felt-potency about their abilities to successfully engage in social interaction. Social skill is composed of those cognitive abilities and behavioral skills which are prerequisites to social performance. Social performance may be equated to actual social behavior. Social competence is the capability to engage in effective social behavior. It is distinct from social performance, i.e., actual

social behavior, since social performance is the actual production of skilled behavior, while social competence is the capability to generate skilled behavior (Rotheram, 1980; Trower, 1982).

Need

There are theoretical, scientific and therapeutic reasons why greater clarity is needed regarding the structure of social intelligence. There is the lack of a general and mutually agreed upon definition of the construct. There is a lack of agreement about the domains which potentially comprise the model. For example within the domain of social self-efficacy, Marsh and Smith (1982) argue that "definitions of self-concept are nonexistent, imprecise, or contradictory, and the search for specific dimensions that underlie self-concept has been unproductive" (p. 430). This same statement is true for other social intelligence domains (Ford and Tisak, 1983). Obviously these gaps hinder further theory development and restrict research studies. This in turn weakens the basis for counseling interventions.

Marx and Winne (1978) have distinguished between within-network and between-network studies of constructs such as social intelligence. In the case of social intelligence between-network studies attempt to show that the construct is distinct from other variables, such as academic achievement, that

are hypothesized to be separate constructs. Within-network studies attempt to show that there are consistent, distinct components that make up the construct, e.g., social interest, social self-efficacy and social skills. Marx and Winne argue that the clarification of within-network inferences is prerequisite to valid research on between-network inferences. The social intelligence field is in need of clarification at both network levels.

Ford (1982) argues that social competence research at this stage should focus on five questions:

1. How is competence defined? How should it be defined?
2. How is competence measured? Could it be measured better?
3. What characteristics do people have that help them become competent?
4. How are these characteristics related to each other?
5. What characteristics do environments have that help people become competent?

Increased examination of the variance in social competence due to personality characteristics also needs to occur. Twentyman and Zimering (1979) concluded after their review of the social skills training literature that one area in need of further research was the area of subject characteristics and social competency. Reviewers of the assertiveness training literature also report a deficiency of studies addressing learner characteristics (Brown & Brown, 1980).

Significance of the Study

This study will empirically develop and test a hypothesized partial model of social intelligence and will analyze for personality variance in the model. The information gained from this study will allow counselors, researchers and educators to better understand the construct of competence.

Such information would assist the counselor educator and the counseling practitioner to design more appropriate and efficient social skills training programs. Improvement in program design could occur through a more accurate knowledge of the components of social competence. With this information, training programs could then be designed which would specifically address deficits in specific competence areas and more adequately meet unique individual needs.

For researchers this study will represent an investigation into an area of minimal study to date. It will represent a step toward partial clarification of the construct of social intelligence and will provide an empirical base for further exploration and validation of the construct. It will be a first step toward providing the knowledge base from which research on other dimensions of social intelligence, issues of competence measurement and competence development interventions can be directed.

Definitions of Terms

Behavioral Repertoire

Behavioral repertoire is a category of social skill. The term refers to overt behavioral actions or skills which promote positive social interaction. This includes such behaviors as emission of non-verbal cues of affect, listening behaviors, self-disclosing behavior, assertive behavior, etc.

Gender Identity

Gender identity, or sex role identity, refers to the fact that within males and females there is variability with regard to psychological gender, i.e., the constructs of masculinity and femininity. While psychological masculinity and femininity have traditionally been viewed as opposite endpoints on a single masculine-feminine dimension, recent reconceptualizations (Bem, 1974; Berzins, Welling & Wetter, 1978; Spence & Helmreich, 1978) view masculinity and femininity as two independent (orthogonal) dimensions of positive or desirable behavior on which both sexes vary. Masculinity is conceptualized as having an instrumental or agentic orientation, while femininity is viewed as having an expressive or communal orientation. This conceptualization of gender identity has led to two models of androgyny. One model, the balance model, assumes that androgyny consists of a balance of masculine and feminine traits. Androgyny in this model is a summation of masculine and feminine scores. The second model,

the categorical model, results from an orthogonal conceptualization of gender identity which results in four quadrants for purposes of classification, as shown in Figure 1. Persons who have high scores on both masculinity and femininity scales are classfied as androgynous. Persons with high masculine scores and low feminine scores are classified as masculine. Persons with the opposite pattern of scores are termed feminine. Those persons with low scores on both dimensions are termed undifferentiated. A male with high masculinity scores and low femininity scores may also be referred to as sex-role stereotyped or high sex-role stereotyped. A female with low masculinity and high femininity would be referred to in a similar fashion. Androgynous and undifferentiated persons are occasionally referred to as low sex-role stereotyped persons. Males with low masculinity and high femininity scores are referred to as crosstyped or sex-role reversed, as would females with the opposite pattern of scores. The terms gender identity, sex role identity or psychological gender may be used interchangeably.

General Intelligence

General intelligence refers to verbal and abstract intellectual capabilities of a generic nature.

Social Cognition

Social cognition is a category of social skill. The term refers to those cognitive abilities such as role-taking,

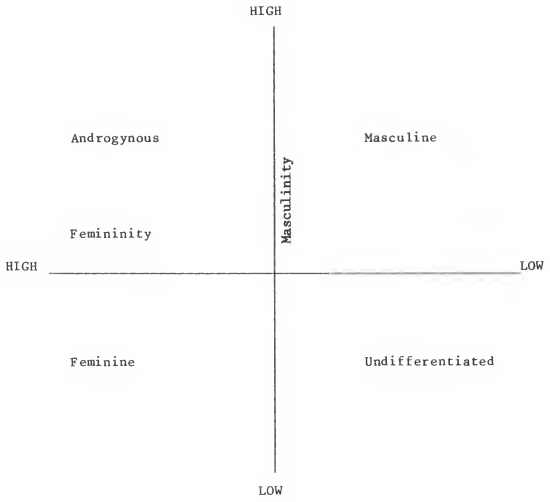


Figure 1

Components of Gender Identity

affective and cognitive empathy, perspective taking, non-verbal affect and behavior cue decoding or interpretation which results in an understanding of a social situation.

Social Competence

Social competence is a category of social intelligence which refers to the individual's capability to perform behaviors that are socially effective, i.e. mutually beneficial. As conceptualized for this study, social competence is a multifaceted construct. It is hypothesized to include a motivational component, social interest; a potency component, self-efficacy; and a skills component.

Social Intelligence

Social intelligence is an overarching construct which includes both the construct of social competence as defined herein and the actual performance of positive social behavior.

Social Interest

Social interest is a hypothesized domain of social competence. The term refers to the person's willingness to contribute to the welfare of others and to cooperate in social tasks. It follows from Adler's (1956) conception of social interest as an evaluative attitude toward life which enables one to form ties with other persons.

Social Performance

Social performance is actual social behavior of a mutually beneficial nature.

Social Self-Efficacy

Social self-efficacy is a hypothesized domain of social competence. The term refers to a person's level of self-esteem, perceptions and feelings of confidence, and expectations of successful outcomes in social situations.

Social Skill

Social skill is a hypothesized domain of social competence. The term refers both to an overt behavioral action or group of actions which result in a positive social interaction (behavioral repertoire) and to social cognition abilities which also result in positive social interation.

Research Questions

The following research questions will be addressed by this study:

1. To what extent are the hypothesized domains of social competence, social interest, social self-efficacy, social cognition and behavioral repertoire, independent of each other?

2. How are the hypothesized domains of social competence related to social performance?

3. To what extent are the hypothesized domains of social competence independent of general intelligence?

4. How is gender identity related to the hypothesized domains of social competence?

Organization of the Study

This study will be organized into five chapters. This first chapter defines the problem, examines its significance, defines terminology and clarifies the questions to be answered by the study. The second chapter will review the literature related to the topic of the study. It will be divided into four sections. The first section will review current models of social competence. The second will present the hypothesized partial model that will be tested. The third section will review the empirical evidence for the hypothesized model. The final section will examine the relationship of gender identity to the hypothesized model. Chapter three will discuss the methodology of the study, i.e. the subject sample, the instrumentation, the data collection and analysis procedures. The next chapter will present the results of the study and the final chapter will discuss the implications of these results.

CHAPTER II
REVIEW OF THE RELATED LITERATURE

Models of Social Intelligence

As defined in this study, social competence is the component of social intelligence which is comprised of the person's capability to act in a socially appropriate manner. Since capability may not necessarily lead to actual performance the distinction between social competence, social performance and social intelligence was made earlier. The aspect of social intelligence under investigation in this study is the capability or competence dimension.

A study of the structure of social intelligence must first address the basic issue of definition; what is competence? The breadth of competence definitions is illustrated by an early listing by Inkeles (1969) of six dimensions and sixteen subdimensions of competence. A National Institute of Mental Health (NIMH) conference developed twenty-nine different criteria for social competence (Anderson & Messick, 1974). In 1955 Foote and Cottrell identified six components of interpersonal competence; health, intelligence, empathy, autonomy, judgment and

creativity. Smith (1966) summarized the elements of competence as self-confidence, commitment, energy, responsibility, autonomy, flexibility and hopeful realism. Gladwin (1957) identified three criteria for competence. First is the ability to use a variety of alternative pathways to reach a goal. Second, the competent individual is able to use a variety of social systems within the society. Third, competence depends upon effective reality testing.

Following Ford (1982) it is possible to identify five interrelated but partly distinct definitions of competence in current use. The first is the motivational construct in which competence is defined as the organism's capability for developing goals and then generating goal-directed activity. White (1959) was an early proponent of this position. This perspective assumes that feelings of competence and self-determination are needs of the human organism. This definition may be stated in the negative by defining social incompetence as "being unable to care about anything or form any commitments" (Wrubel, Benner, & Lazarus, 1981, p. 74). Adler (1982) defines one component of competence on an individual level as "the motivation to deal actively with one's environment" (p. 34). Based on this definition a person may possess the social skills to date for example but may be inhibited from doing so by a lack of motivation.

Closely related to the above perspective is the definition of competence as self-efficacy. Self-efficacy is an individual's expectation of personal mastery and success (Bandura, 1977, 1982). In the social situation self-efficacy indicates one's expectation of successful and positive interaction with other persons. The significance of self-efficacy rests in its potential as one of the most powerful determinants of behavior (Bandura, 1982). From Bandura's perspective, self-efficacy expectancies determine the initial decision to perform a behavior, the effort expended, and the amount of persistence shown in the face of adversity. Self-efficacy has been found in research studies to be a more powerful predictor of behavior than either outcome expectancies or past performance (Bandura, 1977; Bandura, Adams, Hardy & Howell, 1980). The competent person from this perspective is the person who views himself as competent in either a specific situation or as a general life view.

Another definition of competence is as a skill. A skill is the ability to perform those actions which bring positive reinforcements or eliminate negative reinforcements. Cartledge and Milburn (1980) define social skills as "behaviors that are emitted in response to environmental events presented by another person or persons, e.g., cues, demands, or other communications, and are followed by positive environmental responses" (p. 7).

Kelly (1982) calls social skills "the strategies . . . used to obtain reinforcing consequences from (the) social environment" (p. 11). The competent person is the person who possesses social skills. Social skills may consist of cognitive abilities such as non-verbal decoding skills or social problem-solving skills. It may also consist of behavioral motor responses such as self-disclosure or assertiveness skills on either verbal or non-verbal levels. Rotheram (1980) calls this latter perspective the "behavioral repertoire" view of competence. In this line she points out that the actions made possible by the possession of a skill may or may not actually occur. In other words competence does not equate to performance as established earlier.

Based on this last point another way to define competence is to focus on performance. From this viewpoint the competent person is the one who is effective in performing socially beneficial behaviors, i.e. achieving objectives, etc. A number of researchers utilize this definition. Wine (1981) argues that the defining characteristic of competence approaches is a concern with the effectiveness of individual's interactions with the environment. Combs and Slaby (1973) define social intelligence as "the ability to interact with others in a given social context in specific ways that are societally acceptable or valued and at the same time personally beneficial, or beneficial primarily to

others" (p. 162). Ford and Tisak (1983) define social competence as the attainment of relevant social goals in specified social contexts, using appropriate means and resulting in positive developmental outcomes. Rathjen (1980) contends that how competent a person is can be determined by effectiveness. One example of this approach is the conceptualization by Lazarus and his colleagues (Wrubel, Benner, & Lazarus, 1981) of competence in terms of a stress and coping paradigm. They view social competence as a "summation of how well the person functions, e.g., social effectiveness, in a variety of settings" (p. 70). They further state that social competence "refers to the management of any social encounter whether stressful or not" (p. 70).

The final definition of competence is the most global. In this perspective competence is conceptualized as personality traits that are demonstrated in organized patterns of cognitive, affective, and/or behavioral functioning (Spence & Helmreich, 1978; Wiggins & Holzmuller, 1978). This is an inclusive definition that would incorporate motivational, self-efficacy, social skill and social performance components.

Several researchers have developed conceptual models of social competence which combine two or more of these different approaches. Thorndike (1920) in his original definition of the construct included the ability to (1) understand others and (2)

act or behave wisely in relating to others. White (1974) broadened his motivational definition of competence to include specific strategies (e.g., coping, defense, mastery) which competent people use in their adaptive processes.

Meichenbaum and his colleagues (Meichenbaun, Butler & Gruson, 1981) present a social competence model that includes three components: (1) overt behaviors; (2) cognitive processes; and (3) cognitive structures. Overt behaviors are directly observable behaviors. Cognitive processes are the self-statements, expectancies and problem-solving cognitions that precede, accompany and follow our overt behaviors. Cognitive structure refers to the individual's meaning system which "provides motivation and direction for both thought and behavior" (p. 37).

O'Malley (1977), in a review article on various research perspectives utilized to study social competence, develops a model for the study of social competence consisting of three components: perceptions of interpersonal resources, social cognition and a varied repertoire of lines of action. Allowing for differences in terminology O'Malley's approach conceptualizes competence as consisting of three components: self-efficacy, social cognition and social behavior.

Tyler (1978) posits a three component model of competence: self-attitudes, world-attitudes and behavioral attributes. Self-attitudes refer to the competent person's favorable

self-evaluation, view of himself as causally important in his own life, and as essentially responsible when effects do and do not correspond to his desires. Tyler points out that the locus of control construct is a measure of this dimension of competence. By world attitudes Tyler indicates that the competent person takes a stance of moderately optimistic trust toward interaction with others. Behavioral attributes for the competent person consist of an active coping orientation. Sarason (1981) distinguishes four components of social competence: social problem-solving, empathy and perspective-taking, control of impulsive behavior and social skills.

The value of conceptual models and theory lies not only in their heuristic value but also in the degree to which the model or theory promotes attempts at disconfirmation (Popper, 1972). A conceptual model that integrates much of the existing data is extremely valuable. However, if its components cannot be empirically supported, then the validity of the theoretical integration must be challenged.

The above are conceptual models. To admit this does not minimize their value, but it does identify a gap which should be addressed; the empirical derivation of a structural model of social competence. Such a model will by necessity have its origins in logical analysis and empirical research. It must of course be subject to disconfirmation. Furthermore the model

should incorporate the major definitions of competence. A model meeting those criteria is developed below.

An Hypothesized Partial Model of Social Competence

Social competence is the person's capability to perform behaviors which are mutually beneficial or socially effective. A number of personality factors, cognitive attributes and behavioral skills contribute to this capability. Enumeration and examination of all these possible components are beyond this study's scope. For this reason three domains of social competence that appear to be related to the performanace of socially intelligent behavior have been selected for study. These are social interest, social self-efficacy and social skill, with social skill composed of two components; social cognition and behavioral repertoire. The components of social intelligence that will be examined in this study are listed below.

A. Social Interest

B. Social Self-efficacy

C. Social Skills

    1. Social Cognition

    2. Behavior Repertoire

Social interest refers to a person's level of motivation to engage in socially beneficial activity. Adler (1956) defined social interest as an evaluative attitude toward life that enabled one to identify and form ties with one's family and other

groups. It should be noted that high social interest does not mean that the person is highly sociable or "likes to socialize." In fact Crandall (1980) reports an insignificant correlation between level of social interest and extraversion as measured by the Eysenck Extraversion Scale, r = .06. Rather it is a person's interest in and concern for the well-being of his fellows that is the core of social interest. From Adler's perspective an artist working in seclusion may have high social interest if his goal is to make a contribution to mankind.

Social self-efficacy refers to the individual's sense of potency and ability in a social situation. Constructs which have been found to be related to social self-efficacy are locus of control and self-esteem.

The domain of social skill is composed of two categories. The category of social cognition encompasses those abilities and skills which assist the person to accurately perceive and interpret his or her environment. The domain encompasses such abilities as role taking, empathy, non-verbal decoding, affective sensitivity, etc.

The other category of social skill, behavioral repertoire, refers to observable verbal or non-verbal motor action or responses a person may make in order to impact his social environment. These may take the form of self-disclosure by letting one's thoughts, beliefs, or emotions be known to the

other. Another action may be assertive behavior; i.e. attempting to impact the other's thoughts or behaviors. A third set of behaviors, listening skills, may be used in order to engage in role-taking.

Empirical Evidence for the Hypothesized Model of Social Intelligence

In this section the empirical evidence supporting the hypothesized model of social intelligence will be presented. Support for the model will be drawn from three sources. First, the relationship of the hypothesized domain to actual social performance or behavior will be considered. Second the relationship of the domain to general intelligence will be considered. Finally the relationship of the domain under review to the other hypothesized domains will be discussed. The existence of the domain as a separate and identifiable element of social competence can be supported if it is related to actual social behavior, if it is distinct from general intelligence, and if there is minimal overlap with the other hypothesized domains.

Social Interest

The relationship of social interest to social performance

Adler (1973) hypothesized that social interest would be related to what he termed common sense intelligence or "getting along with one's fellows." Crandall (1975) argues that the core of social interest is valuing persons other than the self, as

operationalized by "identifying with and working toward the betterment of humanity" (p. 187). Crandall, following Adler, argues that social interest facilitates productive coping with the basic life issues of work cooperation, communal life and friendship, and childrearing and that a lack of social interest is a major factor in the etiology of psychopathology.

Based on these definitions social interest would clearly be expected to be related to social performance. Two major measures have been developed for use in research studies to further delineate the nature of social interest. Greever and her colleagues (Greever, Tseng & Friedland, 1973) developed the Social Interest Index (SII). Crandall (1975) developed a scale which he named the Social Interest Scale (SIS). Based on these instruments a number of studies support a strong relationship between social interest and social behavior. Greever et al. reported that experts, based on their knowledge of a person's everyday behavior, were able to discriminate high from low scorers on the SII with an eighty-five percent accuracy rate. Crandall (1980), using the SIS, reported that peer ratings of social interest level were related to significant differences on SIS scores between high school students rated high in social interest and students rated low in social interest, $t(43) = 3.60$, $p < .001$. Similar results were found for college students, $t(54) = 2.42$, $p < .02$. Other evidence for a social interest-social

performance linkage is that convicted felons were found to be significantly lower in social interest than a group of university employees, $t(132) = 3.27$, $p < .005$, or a group of male university students, $t(66) = 2.52$, $p < .02$. Crandall (1980) further found a moderate correlation between high social interest and high cooperative behavior as measured by the Prisoner's Dilemma game, $r = .32$, $p < .005$ ($N = 85$). Persons scoring higher in social interest also volunteered at higher rates for work time contribution to a charitable agency, $t(22) = 2.21$, $p < .05$. Zarski, Sweeney and Barcikowski (1977) investigated the relationship between a counselor's level of social interest and level of effectiveness as measured by client satisfaction, client self-acceptance and client sociability. Univariate regression analysis yielded strong and significant results: satisfaction, $R = .55$, $F(1, 97) = 41.52$, $p < .0001$; self-acceptance, $R = .72$, $F(1, 97) = 106.20$, $p < .0001$; sociability, $R = .62$, $F(1, 97) = 60.29$, $p < .0001$).

Other studies indicate that social interest is related to personality characteristics associated with effective social behavior. Greever et al. (1973) found a number of significant correlations between high levels of social interest as measured by the SII and several subscales of the California Psychological Inventory which are related to positive social behavior and healthy psychological adjustment: dominance, $r = .27$, $p < .001$;

sociability, $r = .27$, $p < .001$; self-acceptance, $r = .16$, $p < .01$; sense of well-being, $r = .36$, $p < .001$; responsibility, $r = .39$, $p < .001$; socialization, $r = .39$, $p < .001$; self-control, $r = .19$, $p < .01$; tolerance, $r = .26$, $p < 001$; communality, $r = .40$, $p < .001$; ($N = 344$). Crandall (1980), using the SIS, found that high scores on social interest were moderately and negatively correlated with the hostility scale of the Multiple Affect Adjective Checklist, $r = -.50$, $p < .001$ ($N = 46$). Crandall (1980) also found that persons high in social interest tended to hold more favorable opinions of the altruism and trustworthiness of others as measured by the appropriate subscales of the Wrightman Philosophy of Human Nature questionnaire, $r = .32$, $p < .05$ ($N = 46$). He also found significant correlations with appropriate values of the Rokeach Value Survey: Peace, $r = .32$, $p < .005$; Equality, $r = .30$, $p < .01$; and Family Security, $r = .43$, $p < .001$; ($N = 85$). Finally, Crandall (1980) found that persons high on social interest were significantly higher on the Responsible category of Leary's Interpersonal Adjective Checklist and lower on Aggressiveness and Rebellious categories, $F(1, 768) = 12.27$, $p < .001$; $F(1, 768) = 9.30$, $p < .005$; $F(1, 768) = 9.96$, $p < .001$ respectively.

Mozdzierz and Semyck (1980a) found evidence that social interest is related to social performance. They found the SII to be significantly related to the MMPI Si subscale, $r = -.30$, $p <$

.001 (N = 140). Since the MMPI Si has been found to be equivalent to a behavioral role play (Williams, 1981) this finding supports the hypothesis that social interest is related to social performance. Mozdzierz and Semyck also found low social interest to be related to higher pathological scores on the MMMPI: Maladjustment, $t(140) = 3.86$, $p < .001$; Factor A, $t(140) = 3.76$, $p < .001$; Causality, $t(140) = 3.52$, $p < .001$; Dependency, $t(140) = 3.40$, $p < .001$; and Manifest Anxiety $t(140) = 3.21$, $p < .01$.

These studies indicate clearly that variance in level of social interest is related to variance in social performance. They further indicate that high social interest is related to positive social behavior. These findings support its inclusion in a more comprehensive model of social intelligence.

The relationship of social interest to general intelligence

From the validational studies on the SII and SIS evidence is available that indicates that social interest is a separate domain from general intelligence. Greever et al. (1973) correlated social interest and grade point average (GPA). They found a low order correlation, $r = .17$, $p < .01$ (N = 330) which disappeared when the data were analyzed by sex: males, $r = .12$, ns (N = 182); females, $r = .09$, ns (N = 148). Mozdzierz and Semyck (1980b), in a validation study of the SII, measured the instrument's correlation with the Shipley-Hartford test of

intelligence. They also found significant but low order correlations between the SII and four of the five Shipley scores: Total, $r = .18$, $p < .05$; Vocabulary, $r = .17$, $p < .01$; Abstract, $r = .14$, $p < .05$ and Estimated IQ, $r = .15$, $p < .05$; ($N = 140$). Crandall (1980) found a nonsignificant relationship between the SIS and the Scholastic Aptitude Test (verbal and mathematical), $r = .06$, ns ($N = 95$).

These studies clearly indicate that the overlap between level of social interest and general intelligence is minimal. Based on these data social interest may be considered to be independent of general intelligence.

The relationship of social interest to other social competence domains

There are few studies examining the relationship of social interest to other competence domains. Mozdzierz and Semyk (1980b) found that persons high in social interest tended to be internal in locus of control, $r = -.17$, $p < .05$ ($N = 140$). Crandall (1980) found a significant correlation between the SIS and the Mehrabian and Epstein Emotional Empathy measure, $r = .40$, $p < .005$ ($N = 60$).

Social interest does appear to be related to other hypothesized domains of social competence at low to moderate levels. As is evident from the limited literature further study is needed to explore these relationships.

Social Self-Efficacy

It has been clearly established that the likelihood that a person will engage in a certain behavior depends in part on the strength of a person's expectancy of success in that behavior (Campbell & Pritchard, 1976; Mitchell, 1974). Lazarus (1966) and Tyler (1978) have proposed that psychosocial well-being is affected by beliefs about personal competencies to control outcomes. Bryant and Veroff (1982), based on a nationwide cross-sectional survey of over 4,000 persons, report that self-efficacy is one of three factors which determine psychological well-being. Other support for this proposition is offered by research studies that indicate that loss of control is associated with depression (Seligman, 1975), deterioration of physical health (Langer & Rodin, 1976; Schulz & Hanusa, 1978), inadequate coping (Bulman & Wortman, 1977), and stress-related illnesses (Glass, 1977). Motowidlo (1981) argues that the constructs of locus of control, self-esteem, self-confidence and self-assurance are all related to expectancy of success or self-efficacy.

The distinctiveness of social self-efficacy from general self-efficacy

One of the first points to be established is a subset of the question of whether social intelligence is distinct from general intelligence. This subset is whether social self-efficacy is

distinct from general self-efficacy and whether it varies by situation or context (academic, social, etc.)? The research evidence indicates that it does.

Marsh and Smith (1982), in a review of factor analytic studies on self-concept found there was general support for the multi-dimensionality of the self-concept. Lawson, Marshall and McGrath (1979) cite a number of studies that support the distinctiveness of the social self-concept. Kokenes (1973) performed a factor analysis of the Coopersmith Self-Esteem Inventory based on an N of 7,600 children (grades 4-8). Four pairs of bi-polar factors emerged, one of which was a social self-esteem factor. Watkins (1978), reporting on the development of a self-esteem measure, indicated that a factor analysis of his scale resulted in two factors, one of which was a social or interpersonal factor. Sherer and his colleagues (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs & Rogers, 1982) constructed and validated a self-efficacy scale. Their factor analysis of the scale resulted in identification of two factors: a general self-efficacy subscale and a social self-efficacy subscale. Fleming and Watts (1980), in an analysis of the Janis-Field Feelings of Inadequacy scale (a social self-esteem measure), found three factors, one of which was a social self-confidence

factor. Monge (1973, 1975) found four factors in his self-concept scale, one of which was a social factor.

The importance of distinguishing social self-esteem from other dimensions of self-esteem was pointed out by DeGregorio and Carver (1980). They correlated the Janis-Field Feelings of Inadequacy Scale (FIS), with the Self-Description Inventory (SDI), a measure of instrumental self-esteem. The Pearson product-moment correlation was .15. The FIS and SDI were also correlated with the social anxiety subscale of the Self-Consciousness Scale. The correlation between the FIS and the social anxiety subscale was strongly negative, $r = -.53$, but minimal between the SDI and the social anxiety subscale, $r = .09$. Social self-esteem is clearly a separate dimension of self-esteem.

VanTuinen and Ramanaiah (1979) investigated the convergent and discriminant validity of selected measures of global self-esteem and social self-esteem, using Campbell and Fiske's (1959) multi-trait, multi-method design. Global self-esteem was measured by the Tennessee Self-Concept Scale and the Coopersmith Self-Esteem Inventory. Social self-esteem was measured by the revised Janis-Field Feelings of Inadequacy Scale and the self-esteem scale of the Jackson Personality Inventory. Orderliness, included as a third trait to establish discriminant

validity, was measured by the order scale of the Personality Research Form and the Comrey Personality Scale. The subject pool was comprised of 97 males and 107 females. The result of their analysis strongly supported social self-esteem as a distinct construct. The social self-esteem measures were more highly correlated with each other than with the other measures, thereby establishing convergent validity. Divergent validity for social self-esteem was established on all three criteria specified by Campbell and Fiske. This study clearly establishes that social self-esteem is a domain that is separate from that of general self-esteem.

The relationship of social self-efficacy to social performance

Several studies indicate that high self-efficacy is related to effective social behavior. Sherer et al. (1982) found a highly significant relationship between the Social Self-Efficacy sub-scale (SSES) of their Self-Efficacy Scale and the Interpersonal Competency Scale, $r = .43$, $p < .0001$ ($N = 376$). Studies using the Texas Social Behavior Inventory (TSBI) as a measure of social self-efficacy have found a number of relationships between level of self-efficacy and social behavior. Marlowe, Weinberg and Hall (1983) found a highly significant relationship between TSBI score and social performance as measured by a modified version of the Lowe-Cautela Social Performance Survey, $r = .36$, $p < .001$ ($N = 94$). Marlowe et al.

also found a moderately strong relationship between TSBI score and a job performance index of which social relationships were a component, $r = .26$, $p < .02$ ($N = 94$).

The relationship of social self-efficacy to general intelligence

Several studies have established that the various components of self-efficacy are distinct from general intelligence.

Helmreich, Stapp and Ervin (1974), in their validation of the TSBI, examined its relationship to general intelligence as measured by the Scholastic Aptitude Test. No significant correlations were found for either males or females: males, $r = .12$ ns ($N = 235$); females, $r = .09$ ns ($N = 271$).

Marlowe, Weinberg and Hall (1983) examined the relationship of TSBI scores and intelligence as measured by the Shipley-Hartford Vocabulary subscale in a group of mental health technicians. They found a highly significant and moderately strong correlation, $r = .39$, $p < .0001$ ($N = 99$). While this relationship is much stronger than that found by Helmreich et al. (1974) the partialling out of the Shipley-Hartford Vocabulary score did not substantially reduce the correlation between the TSBI and other measures of social competence as illustrated in Table 1. Because of this lack of reduction it may be concluded that the shared variance between the TSBI and the Shipley-Hartford is not related to social intelligence as measured by the scales listed in Table 1.

Table 1

Comparison of TSBI Whole and Partial Correlations with Social Intelligence Measures

	Whole	Partial (IQ partialed out)
Social Interaction Self-Statement Test	.47	.44
Social Fear Schedule	-.18	-.27
Sense of Competence Index	.26	.18
Social Self-Esteem Inventory	.58	.54
Perceived Decoding Ability	.37	.23
Personal Problem Solving Inventory	.59	.53
Social Skills Survey (Supervisor)	.49	.42
Social Skills Survey (Subordinate)	.49	.44
Social Skills Survey (Peer)	.44	.43
Social Self-Efficacy Scale	.56	.54

Source: Taken from Marlowe, Weinberg and Hall, 1983

Sherer et al. (1982) in their initial validation study of the Social Self-Efficacy Scale (SSES) found an insignificant relationship between self-efficacy score and educational level, r = -.017 ns (N = 150).

These results indicate minimal shared variance between general intelligence and social self-efficacy.

The relationship of social self-efficacy to other social competence domains

A number of studies indicate that social self-efficacy is related to other dimensions of social intelligence. Marlowe, Weinberg and Hall (1983) found a number of substantial relationships using the TSBI. They found a moderately strong relationship between level of social self-esteem and social skills as measured by the Marlowe-Weinberg Social Skills Survey in three social contexts; skills with supervisor, skills with subordinates and skills with peers. The correlations were as follows: supervisor, $r = .42$, $p < .001$ ($N = 92$); subordinates, $r = .44$, $p < .001$ ($N = 93$) and peers, $r = .43$, $p < .001$ ($N = 91$). Marlowe et al. also found a low-moderate relationship between level of self-efficacy and non-verbal decoding abililty as measured by the Perceived Decoding Ability test, $r = .23$, $p < .05$ ($N = 95$). They found a strong relationship between self-esteem and self-reported level of social problem-solving ability as measured by the Personal Problem-Solving Inventory, $r = .53$, $p <$

.001 (N = 95). All of these correlations are partial correlations with intelligence and social desirability, as measured by the Marlowe-Crowne Social Desirability Scale, partialed out.

Other studies using the TSBI have found some relationships between it and the other social competence domains of this study. Davis (1983) examined the correlation of the TSBI with a set of empathy measures. He found a moderately low but significant correlation between the TSBI short form A (TSBIA) and a measure of cognitive empathy ability (the Interpersonal Reactivity Index; perspective taking scale), $r = .20$ (males), $r = .26$ (females), $p < .05$, (N = 225 males, 204 females). Davis also found a low order significant correlation between the TSBIA and a measure of affective empathy ability (the Interpersonal Reactivity Index; empathic concern scale), $r = .11$ (males), $r = .17$ (females), $p < .05$, (N = 225 males, 204 females).

Sherer et al. (1982) reported several significant correlations between the SSES and other social competence measures. They found a significant but low correlation between the SSES and the Rotter Internal-External Scale, $r = -.17$, $p < .01$ (N = 376). Since a high score on the Rotter is indicative of an external orientation, this result is in the expected direction. A moderate correlation was found with the Rosenberg self-esteem scale, $r = -.28$, $p < .0001$ (N = 376). Again low scores on the Rosenberg indicate higher levels of self-esteem.

Marlowe, Weinberg and Hall (1983) also examined the relationship of the SSES to measures of social skill. They found a similar pattern of relationships with respect to the SSES as they did with the TSBI. Correlations with the Social Skills Survey yielded the following correlations: supervisor, $r = .38$, $p < .001$ ($N = 87$); subordinate, $r = .37$, $p < .001$ ($N = 87$); peer, $r = .37$, $p < .001$ ($N = 86$). A moderate correlation was found between the SSES and the Perceived Decoding Ability scale, $r = .34$, $p < .001$ ($N = 91$). Another moderate relationship was found between the SSES and the Personal Problem-Solving Inventory, $r = .31$, $p < .005$ ($N = 91$). While the number of studies using the SSES are few, all results to date are in the expected direction and lend support to the position that it is indeed measuring a separate domain of social competence.

Correlational studies of both the TSBI and the SSES with measures of other social competence domains produce results which indicate low to moderate shared variance with these other domains. Based on this pattern the distinctivenes of social self-efficacy is supported.

Social Skills: Social Cognition

Walker and Foley (1973) in a major review of the social intelligence literature identified social cognition, i.e. the ability to understand others, as one of the major definitions of social intelligence. This approach identifies social

intelligence as cognitive abilities such as the ability to read non-verbal cues or make accurate social inferences. Terms such as role-taking, empathy and social sensitivity are all descriptive of this process. Sensitivity to the behaviors and reactions of others has both affective and cognitive components as Davis (1983) notes was recognized by Smith (1759) and Spencer (1870) long ago. Davis (1983) however reports that recent empathy theorists and researchers believe that both facets of empathy must be examined jointly.

The relationship of social cognition to social performance

Berndt (1981) reports that "analyses of the relationship between social cognition and social behavior are rare" (p. 195). Flavell and Ross (1981) report that the link between social cognition and social behavior "remains almost virgin terrain" (p. 314). Since the area is not thoroughly researched one approach is to examine social perception abilities in a population with demonstrated social performance deficits. In this case the social perception skills of emotionally disturbed persons were examined to determine the relationship of social perception and social behavior.

The critical role accurate social perception plays in effective social behavior is illustrated by the fact that deficits in non-verbal sensitivity appear to be a common skill deficit in chronically mentally ill persons (Newman, 1977).

Rosenthal and his colleagues (Rosenthal, Hall, DiMatteo, Rogers & Archer, 1979) examined the relationship between sensitivity to non-verbal communication and psychopathology in psychiatric samples in the United States, Ireland and Australia. They compared the non-verbal performance of the psychiatric samples with that of a "normal" group and found that the performance of the psychiatric sample was consistently lower than that of the normal group.

Studies such as those mentioned above support a relationship between social cognition and social behavior. Studies using the instruments of this study also report this pattern. Davis (1983) constructed and validated an empathy measure, the Interpersonal Reactivity Index (IRI), which has four subscales--each measures a different aspect of empathy. The Perspective-Taking (PT) scale assesses the tendency to spontaneously adopt the psychological point of view of others; the Fantasy (FS) scale taps respondents' tendencies to transpose themselves imaginatively into the feelings and actions of fictitious characters in books, movies and plays. The other two subscales measure typical emotional reactions of respondents: the Empathic Concern (EC) scale assesses "other-oriented" feelings of sympathy and concern for unfortunate others, and the Personal Distress (PD) scale measures "self-oriented" feelings of personal anxiety and unease in tense interpersonal settings. Of interest here are the PT and EC

scales. As an aspect of scale validation, Davis examined the relationship of the IRI to several measures of social dysfunction. His findings included the following significant correlations for the perspective-taking scale: level of shyness, $r = -.13$ (males), $r = -.20$ (females), $p < .05$; level of loneliness, $r = -.23$ (males), $r = -.13$ (females), $p < .05$; social anxiety, $r = -.17$ (females), $p < .05$; level of audience anxiety ($r = -.10$ (males), $r = -.12$ (females), $p < .05$; socially undesirable masculine behavior, $r = -.30$ (males), $r = -.28$ (females), $p < .05$; and socially undesirable feminine behavior, $r = -.19$ (males), $r = -.25$ (females), $p < .05$; ($N = 225$ males, 204 females). Correlations of the empathic concern scale with the above indicators of social functioning yielded a somewhat different pattern: level of shyness, $r = .15$ (males), $p < .05$, $r = .07$ n.s. (females); level of loneliness, $r = -.11$ (males), $r = -.19$ (females), $p < .05$; social anxiety, $r = .14$ (males), $r = .12$, $p < .05$; audience anxiety, $r = .19$ (males), $r = .13$ (females), $p < .05$; negatively valued masculine behavior, $r = -.30$ (males), $r = -.35$ (females), $p < .05$; negatively valued feminine behavior, $r = -.14$ (males), $p < .05$, $r = -.01$ ns (females); ($N = 225$ males, 204 females).

Marlowe, Weinberg and Hall (1983) found the Perceived Decoding Ability scale to be moderately correlated with a modified Lowe-Cautela Social Performance Survey, $r = .39$, $p < .001$ ($N = 96$).

While there are differences in the particular patterns of empathy and social behavior relationships identified above, a consistent pattern of relationship does emerge so that it can be safely concluded that a relationship does exist. Higher levels of empathy are related to higher levels of social functioning.

The relationship of social cognition to intelligence

As with social perception and social behavior, the relationship of social perception and general intelligence is not thoroughly researched. The available evidence indicates that the two abilities are only minimally related.

Davis (1983) examined the relationship of the perspective-taking (PT) and empathic-concern (EC) scales of the Interpersonal Reactivity Index to intelligence as measured by the SAT-Quantitative, SAT-Verbal and WAIS-Vocabulary. The pattern of correlations for the PT scale was as follows: SAT-Quantitative, $r = .01$ ns (males), $r = .13$ (females), $p < .05$; SAT-Verbal, $r = -.02$ ns (males), $r = -.09$ ns (females); WAIS, $r = .07$ ns (males), $r = .15$ (females), $p < .05$; ($N = 225$ males, 204 females). The pattern of correlation for the EC scale was as follows: SAT-Quantitative, $r = -.07$ ns (males), $r = -.10$ (females), $p < .05$; SAT-Verbal, $r = -.07$ ns (males), $r = -.08$ ns (females); WAIS, $r = -.10$ (males), $r = -.22$ (females), $p < .05$; ($N = 225$ males, 204 females).

Based on the above data there is clearly no relationship of substance between the PT and EC and intelligence. Empathy as measured by these scales is a separate construct from general intelligence.

Marlowe, Weinberg and Hall (1983) found a moderate correlation between the PDA scale and the Shipley-Hartford Vocabulary scale, $r = .43$, $p < .0001$ ($N = 102$). However when the Shipley score was partialed out from the correlation of the PDA with other social intelligence measures the loss of variance associated with the PDA was minimal as shown in Table 2.

The relationship of social cognition to other social competence domains

Zuckerman and Larrance (1979) investigated the relationship of perceived encoding and perceived decoding abilities using the Perceived Encoding Ability Scale 2 (a self-report of encoding ability) and the Perceived Decoding Ability Scale 2 (a self-report of decoding ability). They found a significant but modest relationship, $r = .27$, $p < .001$ ($N = 385$). The correlation between the Perceived Decoding Total score and the Perceived Encoding Total score was essentially the same, $r = .32$, $p < .001$ ($N = 385$).

Marlowe, Weinberg and Hall (1983) examined the relationship of the PDA Total scale with a number of other measures. They found it to be moderately related to the SSES, $r = .38$, $p < .001$

Table 2

Whole and Partial Correlations of the PDA with Other Measures of Social Intelligence

	Whole	Part (IQ out)
Social Interaction Self-Statement Test	.22	.15
Texas Social Behavior Inventory	.37	.23
Sense of Competence Index	.29	.20
Social Self-Esteem Index	.45	.39
Personal Problem-Solving Inventory	.51	.43
Social Behavior in Work Situations	.51	.39
Social Self-Efficacy Scale	.38	.34

Source: Taken from Marlowe, Weinberg and Hall, 1983

(N = 92); moderately correlated with the Social Interaction Self-Statement Test, r = .22, p < .05 (N = 97); moderately related to the TSBI, r = .36, p < .001 (N = 95); strongly correlated with the Personal Problem Solving Inventory, r = .51, p < .001, (N = 99) and moderately related to the Marlowe-Weinberg Social Skills Survey supervisor, subordinate and peer forms, r = .30, p < .005 (N = 93); r = .30, p < .05 (N = 92); r = .24, p < .001 (N = 92).

Davis (1983) examined the relationship of empathy to self-esteem. Two self-esteem measures, the TSBI and the Briggs Self-Esteem Scale, were used to measure self-esteem. Self-esteem, as measured by the TSBI, was positively and significantly correlated with perspective-taking abilities, r = .20 (males); r = .26 (females), p < .05 (N = 225 males, 204 females). The TSBI was also correlated with the empathic concern scale, r = .11 (males), r = .17 (females), p < .05 (N = 225 males, 204 females). The Briggs Self-Esteem scale was positively correlated with the Perspective-Taking Scale, r = .25 (males), r = .20 (females), p < .05 (N = 225 males, 204 females). However it was not significantly correlated with the Empathic Concern Scale for females and was negatively correlated for males, r = -.11, p < .05 (N =225).

Social cognition, as measured by the PDA and IRI, is moderately related to other social competence domains. This supports it as a distinct domain.

Social Skills: Behavioral Repertoire

The relationship of behavioral repertoire to social performance

There have been limited studies of the two instruments used to measure social skill in this study. Marlowe, Weinberg and Hall (1983) examined the relationship between three forms of a social skill measure, the Marlowe-Weinberg Social Skills Survey-Supervisor, Social Skills Survey-Subordinate, and Social Skills Survey-Peer, and a modified form of the Lowe-Cautela Social Performance Survey. Highly significant and moderate relationships were found for each scale: supervisor form, $r = .43$, $p < .0001$ ($N = 95$), subordinate form, $r = .46$, $p < .0001$ ($N = 96$), and peer form, $r = .39$, $p < .0001$ ($N = 95$). To date no studies have been found which address the potential relationship of social performance to the Perceived Encoding Ability scale.

While the above two instruments have not been extensively investigated in relationship to social performance numerous studies suggest that a strong relationship should exist between a person's behavioral repertoire and their level of social performance. A few of these are briefly summarized. Trower, Bryant and Argyle (1978) note that chronically mentally ill persons exhibit a number of socially inappropriate behaviors such as a blank facial expression, too much silence, lack of continuity of speech, etc. Schonfield and Balian (1959) found that, in comparison to normals, pre-schizophrenic persons are

characterized by social withdrawal and a lack of social adeptness. Gambrill and Richey (1975) found that a measure of assertiveness was able to discriminate between clinical and normal populations.

Cunningham and Strassberg (1981) hypothesized that the well-adjusted individual will demonstrate (a) an ability to discriminate his or her own and other's level of self-disclosure, (b) an understanding of the social norms regarding self-disclosure and (c) the ability and willingness to modulate his or her self-disclosure to fit the situation. Normal subjects met this criteria but neurotics did not.

General social skills have been related to social performance. Arkowitz and his colleagues (Arkowitz, Lichtenstein, McGovern & Hines, 1975) utilized peer ratings to determine the social skills levels of college males who were either low or high frequency daters. They found that low frequency daters were rated as lower in social skill. In this line Jones, Hobbs and Hockenbury (1982) found that the conversational skills of lonely college students were poorer than those of non-lonely students. Other articles have emphasized the role of deficient social skill in determining the psychological state of loneliness (Horowitz, French & Anderson, in press). Lonely adolescents and college students report social skill

inadequacies including passivity (Brennan, in press), lack of assertiveness (Jones, Freemon & Goswick, 1981) and difficulty in making friends naturally and with ease (Horowitz & French, 1979). Forness and his colleagues (Forness, Thornton & Horton, 1981) found a highly significant correlation between a measure of social skill and a classroom teachers rating of appropriate social behavior, $r = .56$, $p < .01$. High-lonely persons also give non-reciprocal and less intimate self-disclosures (Solano & Batten, 1977) and are less accurate at encoding expressive non-verbal communications (Gerson & Perlman, 1979).

Non-verbal behaviors have also been found to be related to social performance. LaCrosse (1975) and Strong and his colleagues (Strong, Taylor, Bratten & Lopez, 1971) determined that non-verbal cues of responsiveness (smiles, gestures, eye contact, forward posture) led to perceptions of attractiveness. Responsive non-verbal cues are also associated with enhanced expertness (Dell & Schmidt, 1976) and trustworthiness (Kaul & Schmidt, 1971). Fretz and his colleagues (Fretz, Corn, Tuemmler, & Bellet, 1979) found that high levels of eye contact, direct body orientation and forward lean were associated with attractiveness and facilitativeness. Other studies support this conclusion (Haase & Tepper, 1978; Smith-Hanen, 1977).

The relationship of behavioral repertoire to general intelligence

Marlowe, Weinberg and Hall (1983) examined the relationship of the three forms of the Social Skills Survey to the Shipley-Hartford Vocabulary subscale. Both the supervisor and subordinate scales were moderately and significantly related to the Shipley-Hartford, $r = .31$, $p < .005$ ($N = 96$); $r = .23$, $p < .05$ ($N = 97$) respectively. However the scale to be used in this study, the peer form, was not related to intelligence as measured by the Shipley-Hartford, $r = .10$ ns ($N = 95$). The relationship of the Perceived Encoding Ability Scale has not yet been investigated.

As is evident the relationship of social skill and general intelligence has not been extensively investigated. For example, Marlowe (1982), in a summary of over 100 studies of social skills training with psychiatric clients, found only one study that assessed intelligence in relation to social skill. That study did not find any significant relationship.

While there has not been extensive investigation, the studies cited above, along with the Marlowe and Bedell (1982) and Ford and Tisak (1983) studies cited in greater detail earlier, did not find relationships between intelligence and social skill. While the area has not been extensively researched, it appears that social skill does not appear to be related to general intelligence.

The relationship of behavioral repertoire to other social competence domains

Marlowe, Weinberg and Hall (1983) examined the relationship of social skill as measured by the three forms of the Social Skills Survey to the hypothesized self-efficacy domain of social intelligence. They found the following correlations: SSES and supervisor form, $r = .41$, $p < .0001$ ($N = 91$); SSES and subordinate form, $r = .40$, $p < .0001$ ($N = 91$); SSES and peer form, $r = .39$, $p < .0001$ ($N = 91$); TSBI and supervisor form, $r = .49$, $p < 0001$ ($N = 185$); TSBI and subordinate form, $r = .49$, p .0001 ($N = 187$); TSBI and peer form, $r = .44$, $p < .0001$ ($N = 182$); Social Self-Esteem Inventory (SSEI) and supervisor form, $r = .43$, $p < .0001$ ($N = 92$); SSEI and subordinate, $r = .41$, $p <$ .0001, ($N = 93$); SSEI and peer, $r = .38$, $p < .0002$ ($N = 92$). These data indicate strong support for the hypothesis that social skill and social self-esteem are moderately overlapped but distinct constructs.

While no studies to date have examined the relationship of the Perceived Encoding Ability scale to the other hypothesized domains of social competence a number of studies indicate such a relationship should exist. Friedman and his colleagues (Friedman, Prince, Riggio & DiMatteo, 1980) found non-verbal expressiveness, as measured by the Affective Communication Test

(ACT), to be related to internality as measured by the Rotter I-E scale, ($r = -.28$, $p < .05$, $N = 76$). They also found that individuals with high self-esteem, as measured by the Coopersmith Self-Esteem Scale, to be more expressive, $r = .27$, $p < .05$, ($N = 75$).

Other studies support a moderate overlap between social skill and the other domains. Hollandsworth (1976) found a significant negative correlation between social fear and assertiveness, $r = -.50$, $p < .05$. Chelune (1976) found a non-significant low to moderate correlation between amount of self-disclosure, as measured by his Self-Disclosure Situations Survey, and locus of control, as measured by the Rotter I-E scale, $r = -.28$, ns. However, his self-disclosure flexibility score was significantly correlated with external locus of control, $r = .32$, $p < .05$.

Schwartz and Gottman (1976) investigated the relationship of positive and negative self-statements about assertive behavior and assertiveness skills to performance of assertive behaviors. In comparing low assertive performers with high assertive performers they did not find differences in skill. Schwartz and Gottman did find however highly significant differences between low and high assertive performers in the use of positive and negative self-statements. Schwartz and Gottman's results support the argument that social cognition is related to social performance but do not support an argument that social skill is

similarly related. However their measure of skill was an unvalidated instrument with poor inter-rater reliability.

In sum, the behavioral repertoire domain shares moderate overlap with the other hypothesized domains. Yet there is sufficient unshared variance to justify its conceptualization as a separate domain of social competence.

The Relationship of Gender Identity and Social Competence

One personality variable that appears to be strongly linked to social competence is that of gender identity (Ford, 1983). Unger (1979) contends that gender identity may be a more important predictor of behavior than biological sex. In a study of the relationship of sex roles and social influence mechanisms Falbo found that sex role, moreso than gender, accounts for significant amounts of variance in measures of influencing others (Falbo, 1977). Wilber (1977) found that a linear combination of a sex role measure (the Bem Sex Role Inventory, BSRI), group membership, education, age and sex did not predict psychological adjustment significantly better than the BSRI alone.

The question then is in what ways is sex-role identity related to social competence? Does the androgynous person possess the highest level of social competence since this category theoretically should possess the greatest capability for behavior flexibility as some researchers contend (Bem, Martyna, &

Watson, 1976; Kelly & Worrell, 1977)? Are there differences in social interest and self-efficacy patterns or social skill levels among the sex role classifications? This section will review the literature addressing the nature of the relationship between gender identity and social competence.

Prior to a review of the literature, brief mention should be made of the major instrumentation used to measure gender identity. There are four major instruments in use: the Bem Sex Role Inventory (BSRI; Bem, 1978); The Personal Attributes Questionnaire (PAQ; Spence, Helmreich & Stapp, 1974); the PRF Andro Scale (Berzins, Welling & Wetter, 1978), which is derived from the Personality Research Form and the Heilbrun Adjective Checklist (Heilbrun, 1976).

A major methodological and interpretation issue is the comparability of these scales. Kelly and his colleagues examined the interscale comparability of the above four measures and found that the majority of subjects were categorized discrepantly by any pair of scales (Kelly, Furman & Young, 1978). This means that there is limited comparability of studies using different scales. Much of the conflicting results found in the literature may be attributed to this problem.

Gender Identity and Social Interest

To date no empirical study has been conducted examining the relationship of gender identity and social interest. Crandall

(1980), in his review of studies using this SIS, found that sex differences in social interest disappeared as persons grew older. He hypothesized this was due to a developmental incorporation of the "feminine" role by males as they mature. This hypothesis is of course open to testing.

Gender Identity and Social Self-Efficacy

A number of studies have directly investigated the relationship between gender identity and self-efficacy.

In a significant methodological study of sex role and self-concept Flaherty and Dusek (1980) stressed the critical importance of how self-concept is measured. They critiqued prior studies on the grounds that only global measures of self-concept were utilized. Instead they argued multi-dimensional self-concept measures should be utilized. This point is the same as that made earlier on the necessity to distinguish social self-efficacy from general self-efficacy.

To address this gap Flaherty and Dusek assessed the relationship of gender identity to self-concept in 162 male and 195 female college students. To measure gender identity they used the BSRI. Self-concept was measured by the Monge Self-Concept Scale (MSCS; Monge, 1973, 1975), a bipolar adjective scale. The MSCS has been shown to have four factors based on a varimax rotation of principle components. These four factors were labeled adjustment, achievement leadership,

congeniality and masculinity/femininity. Flaherty and Dusek found that on the adjustment factor the androgynous group scored significantly higher than the undifferentiated group but there were no other significant differences, $F(3, 349) = 4.81$, $p < .01$. On the achievement/leadership factor androgynous and masculine groups scored significantly higher than feminine and undifferentiated groups, $F(3, 349) = 21.33$, $p < .001$. On the congeniality/sociability factor androgynous and feminine groups scored significantly higher than masculine and undifferentiated groups, $F(3, 349) = 20.68$, $p < .001$. Masculine/ feminine factor scores were consistent with sex role classification scores, $F(3, 349) = 27.67$, $p < .001$. Two implications can be drawn from this study. One is that the relationship of gender identity to self-concept must be examined in the context of specific self-concept domains. Secondly, this study supports the conclusion that irrespective of any specific domain of self-concept, androgynous persons possess higher self-concept levels.

The importance of analyzing social self-esteem and gender identity relationships is emphasized by the Flaherty and Dusek study. Fortunately there are other studies also investigate the relationship of gender identity to social self-esteem. DeGregorio and Carver (1980) investigated the relationship between sex role orientation and psychological adjustment defined

as social self-esteem. Sex role identity was measured by the BSRI. Adjustment was measured by two scales: the social anxiety subscale of the Self-Consciousness Scale and the Janis-Field Feelings of Inadequacy Scale, a measure of social self-esteem. The following results were found. Persons higher in masculinity had significantly higher social self-esteem than persons lower in masculinity, $F(1, 205) = 24.23$, $p < .001$ ($N = 213$). Highly masculine subjects reported significantly less social anxiety, $F(1, 205) = 14.66$, $p < .01$ ($N = 213$). Contrary to the Flaherty and Dusek (1980) study, femininity had no effect on any of the above measures, a result which caused DeGregorio and Carver to voice doubts regarding the construct validity of the Femininity Subscale of the BSRI. It is important to note that the self-esteem dimensions of the instrumentation used in this study were not factorially derived. The fact that masculinity, and not femininity, was so strongly related to social anxiety and social self-esteem is surprising in light of Flaherty and Dusek's results. It is possible that the content of these scales tap instrumental activities.

Bem (1977), using the BSRI, the TSBI, and the Attitudes Toward Problem-Solving Scale (ATPSS) investigated the relationship of gender identity and self-concept in a group of undergraduates. On the TSBI Bem found significant main effects for both males and females, $F(3, 89) = 7.76$, $p < .001$ ($N = 95$

males); $F(3, 67) = 6.37$, $p < .001$ (N = 74 females). Feminine and undifferentiated subjects were found to be low in self-esteem in comparision to the mean scores of androgynous and masculine persons: Males-- feminine, M = 100.6, undifferentiated, M = 103.5, androgynous, M = 117.1 and masculine, M = 119.8; Females-- feminine, M = 107.6, undifferentiated, M = 99.5, androgynous, M = 126.0, and masculine, M = 115.6. However, results of a multiple regression analysis indicated that sex differences moderated this relationship. For males self-esteem was found to be significantly related to masculinity scores (B = .48), $F(1, 81) = 23.16$, $p < .001$ but not to femininity scores (B = 0), $F(1, 81) < 1$, ns. Men high in masculinity were also high in self-esteem regardless of their femininity score. In contrast female self-esteem is significantly related to both masculinity (B = .54), $F(1, 61) = 27.99$, $p < .001$ and femininity (B = .28), $F(1, 61) = 7.74$, p .01.

Spence and his colleagues investigated the relationship of self-concept and sex role identity as measured by the PAQ (Spence, Helmreich & Stapp, 1974). Self-esteem was measured by the TSBI. They found significant correlations between the PAQ and the TSBI. A significant positive correlation was found between the male-valued (masculinity) subscale and the TSBI, $r = .77$, $p < .05$ (N =248 males); $r = .83$ $p < .05$ (N = 282 females). Significant positive correlations of .42 for males and .30 for

females were found between the female-valued (femininity) subscale and the TSBI, $r = .42$, $p < .05$ ($N = 248$ males); $r = .30$, $p < .05$ ($N = 282$ females). In an analysis of self-esteem by sex role categories highly significant results for each category were found, F (not reported), $p < .001$. For males androgynous groups were highest in self-esteem, followed by masculine, feminine and undifferentiated groups, $M = 93.73$, 87.02, 74.55 and 66.82 respectively. A similar pattern was found for females, $M = 98.73$, 92.17, 75.41 and 69.66. As shown, TSBI mean scores for the androgynous and masculine groups were similar as were the TSBI mean scores for feminine and undifferentiated persons. O'Connor and his colleagues replicated the Spence et al. study with a middle-aged upper middle class population (O'Connor, Mann & Bardwick, 1978). They also found masculinity to be significantly correlated with self-esteem in both males and females, $r = .38$, $r = .77$, $p < .05$ ($N = 41$ males, 45 females). Unlike Spence et al. however, they found femininity to be significantly correlated with self-esteem only for females, $r = .46$, $p. < .05$. When analyzing for self-esteem levels by sex-role categories they replicated the findings of Spence et al.

The possibility that masculinity alone is the key factor in self-esteem variance accounted for by gender identity led to further investigations (Antill & Cunningham, 1979). Gender identity was measured by the BSRI, the PRF Andro, and the PAQ.

Self-esteem was measured by the Berger Self-Acceptance Scale and the Janis-Field Feelings of Inadequacy Scale. The average correlation between masculinity and self-esteem was significant and moderate, $r = .48$, $p. < .001$ ($N = 237$). In contrast, the average correlation between femininity and self-esteem was not significant, $r = .09$ ns. This study found masculinity clearly linked to self-esteem, but not femininity.

Puglisi and Jackson (1980-81) investigated the relationship of sex-role identity and self-esteem through adulthood. Sex role identity was measured by the BSRI and self-esteem by the TSBI. Puglisi and Jackson found that androgynous persons displayed the highest levels of self-esteem, followed by masculine, feminine and undifferentiated persons, $F(7, 1950 = 119.20$, $p < .001$ ($N = 2069$). However, they found that masculinity was a far better predictor of self-esteem than femininity. In a multiple regression analysis of factors affecting self-esteem the authors found that masculinity had an $R^2=.39$. The subsequent variables (sex, femininity, age, and education) only raised the R^2 to .43.

Marlowe, Weinberg and Prange (1983) examined the relationship between gender identity and social self-efficacy as measured by the TSBI and the SSES. An analysis of variance of TSBI scores by gender identity categories yielded a significant difference, $F (3.92) = 13.30$, $p. < .0001$. A similar analysis of

SSES scores did not yield significant results, F (3,90) = 1.74, ns.

Does the androgynous person possess a greater sense of self-efficacy? In general yes, with the following qualifiers. One, greater self-efficacy, in either a general or social sense, (as currently measured) is based more on masculinity than on femininity, especially in males. Two, there is a strong possibility that current self-efficacy measures do not tap situations or events which would elicit feminine self-efficacy. Three, the construct validity of the femininity scale of the most frequently used gender identity measure (the BSRI) is questionable (Kimlicka, Wakefield & Friedman, 1980). Within these limits, it can be concluded that the androgynous person possesses a stronger sense of self-efficacy.

Gender Identity and Social Skill

The other conceptualization of social competence is in terms of possession of skills or behaviors which lead to social reinforcement. Studies which have examined this relationship are reviewed below.

Gender identity and social cognition

Isenhart (1978) investigated gender identity differences in the ability to decode non-verbal cues of emotional meaning. Sex role identity was measured by the BSRI and decoding abiliity by the Profile of Non-Verbal Sensitivity (PONS). In a sample of 55

male and 51 female undergraduates Isenhart found no significant correlation between gender identity and decoding ability.

Marlowe, Weinberg and Prange (1983) examined the relationship between gender identity and perceived decoding ability and found androgynous persons significantly superior, $F(3,96) = 7.86$, $p < .0001$. Hall (1979) reviewed eleven unpublished studies of gender identity and non-verbal decoding skill. A total of 793 subjects of various age ranges comprised the population of the study. Nine of the eleven studies utilized the PONS in some format as the measure of decoding ability. The gender identity measures were the BSRI, the PAQ, the PRF Andro and the Children's PAQ. Hall analyzed these studies via a meta-analysis technique. She found that visual decoding is correlated with masculinity at a significantly higher level than visual decoding is correlated with femininity. There were no differences for auditory decoding. Hall also found that decoding ability for feminine persons declines with age. The opposite pattern was found with masculinity. Since femininity would be hypothesized to be related to decoding ability, Hall's results are anomalous. In her explanation of these findings she contends that the harmonious interpersonal goals of the feminine person can be achieved without superior decoding ability and may even be hindered by such abilities. The interpersonal effectiveness

orientation of the masculine person, however, may require a superior ability to decode.

The evidence for any gender identity differences in social cognition skills is tenuous. However, the scope of research is too limited to reach any definite conclusions.

Gender identity and behavioral repertoire

Several studies have analyzed the relationship of gender identity and assertiveness. Kelly and his colleagues examined some assertiveness correlates of sex role orientation using a behavioral role-playing paradigm (Kelly, O'Brien, Hosford & Kinsinger, 1975). Male and female college students were classified into one of four sex-role orientations based on their BSRI scores. They were later asked to role play responses to a live partner in situations designed to elicit either commendatory assertiveness skills or refusal responses. Sex role category means on rated behavioral components of these skills were compared. Both androgynous males and androgynous females were rated as highly effective in both situations. Masculine and feminine groups did not differ from each other and they fell between the androgynous and undifferentiated groups. Kelly et al. concluded that androgyny represents the upper range of a general social competency dimension. A second study examined the relationship of sex roles and commendatory or refusal assertiveness (Kelly, O'Brien & Hosford, 1981). Subjects were 47

male and 47 female undergraduates. The BSRI was used for classification of gender identity and the Behavioral Assertiveness Test (BAT) measured level of assertiveness. Among males androgynous persons were rated as more effective than undifferentiated males on overall commendatory assertiveness, $F(3, 26) = 3.10$, $p < .05$. Androgynous females were rated as more effective than undifferentiated females on refusal assertiveness, $F(3, 26) = 3.70$, $p < .02$), and had higher scores on the Wolpe-Lazarus assertiveness questionnaire, $F(3, 26) = 3.58$, $p < .03$. In summary, androgynous persons of either sex were more effective than any other gender-identity category in either commendatory or refusal assertiveness. The authors concluded that effective interpersonal functioning requires the complex behavioral repertoires which androgynous persons possess.

In a similar vein Currant and colleagues evaluated the impact of sex role identity on willingness to make assertive statements of either an oppositional or expressive nature (Currant, Dickson, Anderson & Faulkender, 1979). They found that androgynous persons were willing to make statements of either type. Feminine females were more willing to make expressive statements while masculine males were more willing to make oppositional statements.

While the above studies indicate androgynous superiority in assertiveness, other studies indicate that masculinity again may be the key factor.

Nix and his colleagues (Nix, Lohr & Stauffacher, 1980) analyzed the relationship of sex role identity, as measured by the BSRI, and assertiveness, as measured by the College Self-Expression Scale (CSES). Subjects were 46 male and 56 female college undergraduates. Data analysis consisted of a stepwise multiple regression analysis using the CSES score as the dependent variable and masculinity, femininity and sex as predictor variables. The masculinity score accounted for fifty-three percent of the CSES variance. Neither sex or femininity accounted for any significant account of variance.

Rodriguez and colleagues also examined the relationship of sex role identity and assertiveness in a sample of 80 college women (Rodriguez, Nietzel & Berzins, 1980). Gender identity was measured by the PRF Andro Scale. Assertiveness was measured by a behavioral role play, and peer ratings and self ratings using the Conflict Resolution Inventory (CRI). The behavioral role play was conducted under two conditions, a "as you would normally respond" or "act natural" condition and a "make the most assertive response possible" condition. Rodriguez et al. found that masculinity scale scores were significantly and positively related to all three measures of assertion, $r = .40$, $p < .01$ ($N =$

80)(self); $r = .26$, $p < .10$ ($N = 68$) (peer); $r = .41$, $p < .01$ ($N = 80$) (behavioral). High scores on the femininity scales were correlated with low assertiveness scores on all three measures: $r = -.30$, $p < .01$ ($N = 80$) (self); $r = -.30$, $p < .01$ ($N = 68$) (peer); $r = -.21$, $p < .10$ ($N = 80$) (behavioral).

The relationship of non-verbal encoding and gender-identity also has been a subject of investigation (Zuckerman, DeFrank, Spiegel & Larrance, 1982). Subjects were 78 male undergraduates. Gender identity was measured by the PAQ and encoding ability by the Perceived Encoding Ability Scale (PEA), the Affective Communication Test (ACT), and an encoding task. Gender identity was not found to be correlated with either the PEA or the ACT. On the encoding task there was a highly significant correlation between femininity and encoding and a significant negative correlation between encoding and high masculinity-low femininity.

In summary, empirical studies, in general, support the superiority of androgynous persons in the performance of social skills. As was the case with the construct of self-efficacy however, masculinity appears to be a more critical variable than femininity.

CHAPTER III
METHOD OF STUDY

Research Design

This study was a correlational research study since it examined variations in social intelligence variables. An individual's level of social maturity comprised the criterion variable in this study. This variable was measured by the Social Maturity Index (Gough, 1966). There were six sets of predictor variables in the study. The first four predictor variables are all measures of social competence. The first predictor variable is social interest as measured by the Social Interest Index (Greever et al., 1973) and the Social Interest Scale (Crandall, 1980). The second predictor variable is social self-efficacy as measured by the Texas Social Behavior Inventory, Form A (Helmreich & Stapp, 1974) and the Social Self-Efficacy Scale (Sherer et al., 1982). The third predictor variable is social cognition as measured by the Perceived Decoding Ability Scale 2 (Zuckerman & Larrance, 1979) and the Interpersonal Reactivity Index (Davis, 1983). The fourth predictor variable is behavioral

repertoire as measured by the Perceived Encoding Ability Scale 2 (Zuckerman and Larrance, 1979) and the Social Skills Survey--Peer (Marlowe and Weinberg, 1983a). The fifth variable is general intelligence as measured by the Shipley-Hartford Institute of Living abstract and vocabulary (Shipley, 1940). The final variable is gender identity as measured by the Bem Sex Role Inventory (Bem, 1978).

Research Questions

The following research questions will be addressed by this study:

1. To what extent are the hypothesized domains of social competence, i.e. social interest, social self-efficacy, social cognition and social skill independent of each other?

2. How are the hypothesized domains of social competence related to social performance?

3. To what extent are the hypothesized domains of social competence independent of general intelligence?

4. How is gender identity related to the hypothesized domains of social competence?

Population

One hundred and eighty-eight participants for the study were drawn from the direct service staff of the four mental hospitals of the Florida state mental health treatment facility system. These positions included Unit Treatment and Rehabilitation (UTR) Specialist, UTR Shift Supervisor, UTR Supervisor, Charge Aide, Ward Supervisor, Psychiatric Nurse Specialist, Clinical

Psychologist, Occupational Therapist, Licensed Practical Nurse and Rehabilitation Therapist or persons qualified for these positions. The academic requirements, i.e. high school graduation or associate of science degree, for entry into these positions ensured a level of literacy sufficient to enable the participant to complete the questionnaire battery. Participants in the study were predominantly female (87%) with a mean age of 43. The majority of the participants had at least some college education (59%) and were married or cohabitating (62%). Slightly over 50% of the participants were non-Caucasian. Further details on the characteristics of the participants are reported in Chapter IV.

Staff selected for the study were randomly selected by their unit director from the program units of the state treatment facility. At the direct service worker level there are no unique individual characteristics associated with work assignments to program units. A sufficient number of treatment units were randomly selected by the investigator, in collaboration with the administration of the facility, to ensure a numerically adequate participant pool. All direct service day and evening shift staff were afforded at least two opportunities to participate in the study. Assigned participants were informed prior to battery administration that participation was voluntary and anyone not willing to participate in the study was excused. No one availed

themselves of this option. A consent form for the study was signed at that time.

Instrumentation

The following measures were utilized in the study.

Criterion Measure

Social Maturity Index (SMI; Gough, 1966). The SMI was the criterion measure of effective social performance. The SMI was derived from the California Psychological Inventory (CPI) and is intended to be a measure of personality traits associated with socially constructive behavioral outcomes. Development of the SMI was based on a sample of 4,628 nondelinquent males representing average or above-average levels of social maturity and 1,290 prison inmates representing below average social maturity. A cross-cultural sample of Italian nondelinquents and prison inmates was also investigated. Gough determined which of the CPI subscales significantly differentiated the two groups and on the basis of this developed two regression equations which would account for significant variance. This study utilized the first equation (Social Maturity = 25.701 + .408Re + .478So - .296Gi). Using this equation results in a SMI of 136 True-False items.

Predictor Measures

Social Interest Index (SII; Greever, Tseng, and Friedland, 1973). The SII is a 32 item scale, using a five point Likert

format. The anchors for the scale range from "not at all like me" to "very much like me." The scale is scored so that a high score indicates a higher level of social interest. The scale is scored by adding the responses to the items, weighting the "not at all" items one (1) and the "very much" items five (5).

The SII is designed to measure a person's willingness to contribute and cooperate within the areas of four life tasks (work, friendship, love, and self-significance). It was selected for this study because it is one of two validated measures of social interest.

The scale has an internal consistency (Cronbach's alpha) of .81 and a test-retest reliability (two week interval) of .79. Construct validity was established by blind ratings of high and low SII scorers by Adlerian experts. The experts classified high and low SII scorers accurately 85% of the time. The SII was also significantly correlated with several subscales of the California Psychological Inventory: dominance, $r = .27$, $p < .001$; sociability, $r = .27$, $p < .001$; self acceptance, $r = .16$, $p < .01$; responsibility, $r = .36$, $p < .001$; socialization, $r = .39$, $p < .001$; self-control, $r = .19$, $p < .01$; tolerance, $r = .26$, $p < .001$; communality $r = .40$, $p < .01$; ($N = 344$).

Social Interest Scale (SIS; Crandall, 1975). The SIS is a twenty-four item scale based on a forced choice format. It is designed to measure a person's interest in the welfare of others.

It was selected for this study because it is one of two validated measures of social interest as defined in this study.

It has a split-half reliability (Spearman-Brown) of .77 and a test-retest reliability (over a five week period) of .82. Construct validity was established by a comparision of sociometric peer ratings and SIS scores. It was found that frequently selected peers were significantly higher in social interest, $t(43) = 3.60$, $p < .001$; $t(54) = 2.42$, $p < .02$. Significant correlations of the SIS with expected scales from the Rokeach Value Survey were found: Peace, $r = .32$, $p < .005$; Equality, $r = .30$, $p < .01$; Family Security, $r = .43$, $p < .001$; Pleasure, $r = -.41$, $p < .001$; Exciting Life, $r = -.40$, $p < .001$, and Happiness, $r = -.29$, $p < .01$. Correlations in the expected direction were found between the SIS and the Leary Interpersonal Checklist categories: Responsible, $F(1, 768) = 12.27$, $p < .001$; Aggressive, $F(1, 768) = 9.30$, $p < .005$; and Rebellious, $F(1, 768) = 9.96$, $p < .005$. It was correlated negatively with the Hostility scale of the Multiple Affective Adjective Checklist, $r = -.50$, $p < .001$ ($N = 46$). In addition persons with high social interest scores were found to volunteer more frequently at a charitable agency, $t(22) = 2.21$, $p < .05$.

The SIS is scored by adding those selected items which are high social interest items.

Self-Efficacy Scale (SES; Sherer et al. 1982). The SES is a thirty-six item scale composed of two factorially derived subscales, a general scale and a social scale. For this study only the social subscale was used and was called the Social Self-Efficacy Scale (SSES). The SSES is a six item scale with a five point format which is a measure of efficacy expectations in social situations. A high score on the test is an indication of high social self-efficacy. The SSES was selected for this study because it is specifically designed to measure social self-efficacy and is an economical and reliable instrument.

The SSES has an internal consistency of .71. There is a significant correlation of .28 with the Marlowe-Crowne Social Desirability scale. Construct validity data reported by Sherer et al. include a moderately positive correlation with the Interpersonal Competency Scale, $r = .43$, $p < .0001$ ($N = 298$), and a negative correlation with the Rotter Internal-External Scale, $r = -.17$, $p < .01$ ($N = 298$). Both of these correlations are in the expected direction. Further construct validity is provided by Marlowe, Weinberg and Hall (1983) who found significant correlations between the SSES and several social competence measures including the following: Social Skills Survey - Supervisor, $r = .41$, $p < .001$ ($N = 91$); Social Skills Survey - Subordinate, $r = .40$, $p < .001$ ($N = 91$); Social Skills Survey--Peer, $r = .39$, $p < .001$ ($N = 90$); Perceived Decoding Ability, $r = .40$, $p < .001$ ($N = 95$); Personal Problem Solving

Inventory, $r = .41$, $p < .001$ ($N = 95$); Sense of Competence Index, $r = .23$, $p < .05$ ($N = 93$); TSBI, $r = .56$, $p < .001$ ($N = 93$) and the Social Interaction Self-Statement Test, $r = .43$, $p < .001$ ($N = 94$). Criterion validity was established by Sherer et al. They found a moderately negative relationship between the SSES and number of times fired, $r = -.30$, $p < .01$ ($N = 150$) and number of jobs quit, $r = -.20$, $p < .05$ ($N = 150$).

Texas Social Behavior Inventory, Short Form A (TSBIA; Helmreich and Stapp, 1974). The TSBIA is a sixteen item short form of the thirty-two item TSBI. Both the TSBIA and the TSBI are measures of self-esteem or perceptions and feelings of competence in social situations. Both forms use five point Likert scales with anchors ranging from "not at all characteristic of me" to "very much characteristic of me". Each item is given a score from zero to four with zero representing the response associated with lower self-esteem and four that response associated with highest self-esteem. High scores are therefore indicative of high levels of self-esteem.

The TSBIA is strongly correlated with the TSBI, $r = .973$ (males), $r = .974$ (females), $p <$ not reported ($N = 238$ males, 262 females). There is no significant difference between the two forms.

Test-retest reliability (no time period reported) is .94 for males and .93 for females (N = 1,000). The scale is orthogonal for males with the Marlowe-Crowne Social Desirability Scale and shows a modest but significant correlation for females, $r = .32$, $p < .05$. In terms of contruct validity the TSBI is strongly correlated with the self-esteem scale of the California Psychological Inventory, $r = .52$ (males), $r = .50$ (females), $p < .001$. The TSBIA was selected for this study because of its psychometric equivalence to the TSBI. The TSBI is one of the major self-esteem measures designed specifically to measure self-esteem in social situations. It is a widely utilized measure in the literature.

Perceived Decoding Ability Scale, Form 2 (PDA2; Zuckerman and Larrance, 1979). The PDA2 is intended to be a measure of a person's capability to decode or interpret the non-verbal cues of emotion emitted by another person. In format it is a sixteen item, seven point Likert scale instrument. Selection choices range from agree (+3) to disagree (-3). A high score on the instrument indicates a high level of decoding ability.

The PDA2 has an internal consistency (Armor's Theta) of .72 and a test-retest reliability (over a three week period) of .79. The PDA2 is strongly correlated with the PDA Total scale, a forty-six item measure, $r = .95$, $p < .001$ ($N = 385$). Construct validity of the PDA was determined by correlations between it and

a number of other social intelligence measures. The PDA Total was found to be moderately correlated with the Social Self-Efficacy Scale, $r = .38$, $p < 001$ ($N = 92$); moderately correlated with the Marlowe-Weinberg Social Skills Survey supervisor, subordinate and peer forms, $r = .30$, $p < 005$ ($N = 93$); $r = .30$, $p < .05$ ($N = 92$); $r = .24$, $p < 001$ ($N = 92$) respectively; moderately correlated with the Social Interaction Self-Statement Test, $r = .22$, $p < .05$ ($N = 97$); moderately correlated with the TSBI, $r = .36$, $p < .001$ ($N = 96$); moderately correlated with the Sense of Competence Index, $r = .28$, $p < .005$ ($N = 96$); moderately correlated with the Social Self-Esteem Inventory, $r = .44$, $p < .001$ ($N = 95$) and strongly correlated with the Personal Problem-Solving Inventory, $r = .51$, $p < .001$ ($N = 99$) (Marlowe, Weinberg & Hall, 1983).

The PDA2 was selected because of its psychometric equivalence to the PDA Total Scale. The PDA scales are the only validated self-reports of non-verbal decoding ability. Because of the importance of non-verbal behavior in social interaction it is important that it be measured.

Interpersonal Reactivity Index (IRI; Davis, 1983). The IRI is a twenty-eight item self-report measure designed to assess four dimensions of empathy: perspective-taking, fantasy, empathic concern and personal distress. The perspective-taking (PT) scale is a seven item scale which assesses the tendency to

spontaneously adopt the psychological point of view of others. The empathic concern (EC) scale is a seven item scale which assesses "other-oriented" feelings of sympathy and concern for unfortunate others. In this study only these two scales were utilized since the remaining two scales were not interpersonal in focus. These two scales, PT and EC, were selected since they were specifically designed to measure the two dominant dimensions of empathy; cognitive empathy and affective empathy (Hoffman, 1977).

A reliability study of the PT scale yielded an internal reliability (Cronbach's alpha) of .75 for males and .78 for females and a test-retest reliability of .61 for males and .62 for females over a period of 60 to 75 days. With regard to construct validity the PT scale was found to be significantly and moderately correlated with the Hogan Empathy Scale, a measure of cognitive empathy ability, $r = .42$ (males), $r = .37$ (females), $p < .05$ ($N = 225$ males, 204 females). There was a significant but low order correlation with the Mehrabian and Epstein Emotional Empathy Scale, a measure of affective empathy ability, $r = .22$ (males), $r = .17$ (females), $p < .05$ ($N = 225$ males, 204 females). In addition there was a significant and moderate relationship between the PT scale and the PAQ F scale, a measure of sensitivity to others, $r = .33$ (males), $r = .37$ (females), $p < .05$ ($N = 225$ males, 204 females).

A reliability study of the EC scale yielded an internal reliability (Cronbach's alpha) of .72 for males and .70 for females and a test-retest reliability of .72 for males and .70 for females over a period of 60 to 75 days. With regard to construct validity the EC scale was found to be significantly correlated, but at a low order of magnitude with the Hogan Empathy Scale, $r = .11$ (males), $r = .25$ (females), $p < .05$ ($N = 225$ males, 204 females). The correlation between the EC scale and the Mehrabian measure was significant and strongly moderate, $r = .63$ (males), $r = .56$ (females), $p < .05$ ($N = 225$ males, 204 females) In addition there was a significant and strongly moderate relationship between the EC scale and the PAQ F scale, $r = .58$ (males), $r = .55$ (females), $p < .05$ ($N = 225$ males, 204 females).

Both scales use a five point Likert with the anchors ranging from "does not describe me well" to "describes me very well" The scale is scored so that a high score indicates a high level of empathy.

Perceived Encoding Ability Scale, Form 2 (PEA2; Zuckerman and Larrance, 1979). The PEA2 is intended to be a measure of a person's ability to transmit non-verbal cues of emotion. It is a sixteen item instrument using a seven point Likert format. Selection choices range from agree (+3) to disagree (-3). Items

are scored so that a high score on the PEA2 indicates a high level of encoding ability.

The PEA2 has an internal consistency (Armor's Theta) of .71 and a test-retest reliability (over a three week period) of .77. The PEA2 is strongly correlated with the PEA Total scale, $r = .94$, $p < .001$ ($N = 385$) It is not correlated with the Marlowe-Crowne measure of social desirability, $r = -.02$, $p < .002$ ($N = 253$). Construct validity was established by correlating PEA scores with a behavioral encoding task. Correlations were of a low, positive nature, $r = .19$, $p < .05$; $r = .14$, $p < .05$; $r = .23$, $p < .05$ ($N = 46$). However there was a six month time lag between behavioral measures and PEA administration.

The PEA2 was selected for this study because of its psychometric equivalence to the PEA Total Scale. The PEA scales are the only available reliable and validated self-report measures of non-verbal encoding. Given the major role non-verbal behavior plays in social interaction it is important to assess that dimension of social skill.

Skills Survey Scale Peer (SSSP; Marlowe and Weinberg, 1983a). The SSS is a 15 item, five point Likert self-report on perceived level of social skill in social situations involving peers. It has an internal consistency (Cronbach's alpha) of .93. Construct validity is established by a moderate correlation of .39 ($p < .0001$) with a modified version of the Lowe-Cautela Social

Performance Survey, $r = .39$, $p < 0001$; a moderate correlation with the the Social Self-Efficacy Scale, $r = .39$, $p < .0001$; a moderate correlation with the Social Self-Esteem Inventory, $r = .38$, $p < .0005$; a moderate correlation with the Perceived Decoding Ability scale, $r = .25$, $p < .05$; and a moderate correlation with the Personal Problem Solving Inventory, $r = .39$, $p < .0001$. It has a test-retest reliability of .77 (three weeks).

The SSSP was selected for this study because it was specifically designed to measure the hypothesized behavioral repertoire construct. By design it is not confounded with other domains of social competence or with social performance.

Intelligence Measures

The Shipley-Hartford Institute of Living Scale (SH; Shipley, 1940) is designed to provide a quick, objective measure of intellectual ability. The scale provides measures which include a vocabulary score and an abstract-thinking score. Each portion of the scale has a ten-minute time limit. The vocabulary test is composed of 40 multiple choice items and the abstract-thinking test contains 20 completion items. The split-half reliability coefficients, as computed on a group of 322 army recruits, were .87 for the vocabulary scale and .89 for the abstract-thinking scale (Shipley, 1940). Criterion validity is established by

.70 correlations with the Weschler IQ scales (Koslowsky and Levett, 1975). Gilberstadt, Lushene, and Buegel (1976) report a .78 correlation between the SH vocabulary and the WAIS verbal and a .73 correlation between the SH vocabulary and the entire WAIS scale.

Gender Identity Measure

Bem Sex Role Inventory, Short Form (BSRIS; Bem, 1978). The BSRIS is a 30 item inventory which yields a score classifying respondents into four classes based on their level of psychological masculinity and femininity; androgynous, masculine, feminine or undifferentiated. It uses a seven point Likert scale with anchors ranging from "never or almost never true" to "always or almost always" true.

The BSRIS has an internal consistency (Cronbach's alpha) for the masculinity subscale of .87 for males and .84 for females. For the femininity subscale the alpha is .85 for males and .86 for females. Test-retest reliability over a four week period for the masculinity form was .91 for males and .85 for females. Test-retest over the same period for the femininity subscale was .76 for males and .91 for females.

There is considerable evidence for the criterion validity of the BSRI. A number of studies have found significant correlations between the BSRI and the TSBI (Bem, 1977; Garnets, 1978; Puglisi, 1978; Shumsky, 1980; Wetter, 1979). The BSRI is

also related to self-actualization as measured by the Personal Orientation Inventory (Evanoski, 1979; Nevill, 1977). Other studies have documented the greater social competence of androgynous persons. Campbell, Steffen and Langmeyer (1981) for example found that androgynous college students scored higher than nonandrogynous students on two measures of social competence, one assessing interpersonal skill and the other measuring heterosocial activity. Ford (1982), in a major review of the social competence and androgyny relationship, found strong support for the position that androgynous persons are more socially competent.

The BSRI was selected for this study because of its economy, its broad use and acceptance and its psychometric qualities.

Demographic Questionnaire. A brief demographic questionnaire was used to attain data on age, sex, educational level, marital status, and job position.

Procedures for Data Collection

In preparation for administration the assessment battery were divided into four groups, A, B, C and D. Group A consisted of the timed general intelligence measures. This group was administered at the start of the assessment session so that it could be administered without disruption to the participants. Groups B and C consisted of the measures of social competence. The measures for each domain were separated and placed in

separate groups, i.e. SII in group B, SIS in group C. The order of administration by domains was also reversed. In addition the demographic questionnaire was added to group B and the BSRI to group C. Group D consisted solely of the criterion measure, the SMI. It was placed in a group by itself because of its length. The instruments comprising groups B, C and D were administered in a counterbalanced order so as to minimize order and fatigue effects. The groups, and their internal order of presentation, were as follows:

Group A

Shipley-Hartford Abstraction (20 items)

Shipley-Hartford Vocabulary (40 items)

Group B

Social Interest Index (32 items)

Social Self-Efficacy Scale (6 items)

Perceived Decoding Ability Scale (16 items)

Social Skills Survey--Peer (15 items)

Demographic Questionnaire (7 items)

Group C

Perceived Encoding Ability Scale (16 items)

Interpersonal Reactivity Index (14 items)

Texas Social Behavior Inventory (16 items)

Social Interest Scale (24 items)

Bem Sex Role Inventory (30 items)

Group D

Social Maturity Index (136 items)

Prior to administration an IBM opti-scan sheet was attached to each questionnaire group. An identification number coded for participant number, questionnaire group, counterbalanced order, facility, work shift, and date were written on each opti-scan sheet by the investigator or an assistant.

The battery was administered by the investigator or assistant in a group format during work hours with group size varying according to facility space and staff availability. All instruments were untimed with the exception of Group A for which ten minutes were allowed. Detailed instructions were provided by the battery administrator.

At the commencement of the survey administration and prior to questionnaire distribution the test administrator read the following statement and instructions to the participants.

> Thank you for attending this session today. You have been requested to participate in a research study. This study is attempting to answer some questions about social or interpersonal behavior. Therefore most of the questions you will be asked will be about how you see yourself in social situations.
>
> Your response to these questions will be kept in the strictest confidence. Neither your name or any other form of identification will be requested. There will be a three by five card in the first survey packet that you will receive that has an identification number on it. If you want to know about your scores on the survey you can contact the investigator whose name, address and office phone number are on the back of the three by five card. This system is designed to ensure your privacy in your responses. Neither

the investigator, your co-workers or your supervisor will know your responses to the survey. This individual information will be available only to you and only if you request it.

Completion of this questionnaire is voluntary. You may leave now if you do not wish to participate.

The instructions for each questionnaire are written on the front or top of each survey. Please read the instructions for each survey before you answer the questions. If any instruction is unclear please raise your hand and I will assist you to understand the directions.

In your first survey packet you will find a pencil. Please use the pencil to mark your answers on the answer sheet that will come with your packet. Please do not write on the surveys themselves unless you are specifically instructed to do so. Please keep the pencil for the three remaining survey packets.

Prior to giving you the first survey packet I will illustrate how to complete the answer sheet. (The test administrator should hold up an opti-scan answer sheet and point to the appropriate place on the form as the form is explained). You will notice there is a series of numbers on each side of the answer sheet. However there is only one number one question. Always begin with number one. You will answer the questionnaires by darkening in with your pencil the circle on the answer sheet that corresponds to the alternative you selected on a question. As you answer your survey be sure that when you answer a question you mark the item number on the survey that is the same as the number of the question you are answering. Also be sure that the circle you are darkening is the same number as the alternative you have selected. For example if on question number 20 on the survey you select alternative three. On your answer sheet then you should go to question number 20 and darken in the circle with a three within it. Be sure to darken the circle in completely so that the machine reader will be able to read it.

All questionnaires today, with the exception of one on which you will write on the survey itself, should be answered this way. Are there any questions about how to answer the survey questions?

With the exception of our first survey packet there is no time limit on completing the survey. Do not spend excessive time on any one question. Select the answer that seems most correct when you first look at the question, write it on the answer sheet and then go on to the next question. I estimate it will take from one to one and one-half hours to complete the survey. There will be no formal break so please take a break whenever you need one. Are there any questions?

I mentioned there is one survey on which you will write your answers. We will begin with that questionnaire. I also mentioned that two of the surveys are timed. This is one as is the next. Once we have completed these two surveys I will give you the next survey packet. You should work at your own pace. When it is complete let me know and I will give you another packet. There are a total of four packets, ranging from 69 to 136 questions per packet. You will also find a consent form in your second packet. Please sign this to indicate your willingness to participate in this study. If there are no questions then we will begin.

The instructions for each questionnaire were provided with it. The demographic questionnaire is found in Appendix 1 and the consent form in Appendix 2. Since the other instruments are copyrighted, they are not reproduced here. Source citations may be found in the reference list.

Procedures for Data Analysis

The data analysis was performed using the Statistical Analysis Systems (SAS), the Statistical Package for the Social Sciences (SPSS) and the BMDP Statistical software packages on the University of South Florida's IBM 370 mainframe computer. All of the data was professionally key punched and verified for input accuracy. Each scale was scored by summing up their respective items. Missing values were handled by computing a weighted scale value based on the sum of the answered items multiplied by the

scale's number of items over the answered number of items. For instance, the Social Skills Survey--Peer has 15 items. If one is left blank then the total score for that subject would be the sum of the 14 items multiplied by 15/14. All reversed items were transposed in order that high scores would indicate higher levels of social competence. Descriptions of scoring procedures for each scale are provided in Appendix 3.

In order to provide a framework for understanding the specific statistical analyses to be performed, this section will be organized on the basis of the central research questions.

Research Question No. 1

To what extent are the hypothesized domains of social competence, social interest, social self-efficacy, social cognition and behavioral repertoire, independent of each other? Since the instruments used to assess social intelligence are factorially complex, factor analyses were conducted on each instrument to determine the factorial structure of each scale. An orthogonal principal factors with iteration and varimax rotation (SPSS PA2) procedure was used to derive the factors. Initial factor selection was based on eigenvalues of 1.0. A second order factor analysis was then conducted, using the first order factors, to determine the factor structure of the overall instrumentation. Again the same statistical procedure was used. This approach was selected since the number of subjects was insufficient to conduct a first order factor analysis on all

scales combined. The second order factor analysis resulted in the derivation of independent domains of social intelligence. A cluster analysis (BMDP "Cluster") was then conducted on these domains to determine how individuals grouped themselves on the second order factors.

Research Question No 2

How do the domains of social competence relate to social performance? Once the second order factors were determined individual scores were recalculated for each subject based on the factor structure obtained above. Based on these new scores, converted to standard z scores, a correlation matrix of the derived social intelligence domains and the Social Maturity Index (SMI) was calculated. Correlations of substantial magnitude and statistical significance would indicate a strong relationship exists between social intelligence and social performance. Also a stepwise regression of the SMI on the social intelligence domains was calculated to determine the relative contribution of the derived domains to social performance.

Research Question No 3

To what extent are the hypothesized domains of social competence independent of general intelligence? In order to test this question an orthogonal factor analysis (principal factors with varimax rotation) was conducted using the social competence domain scores and the Shipley-Hartford verbal and abstract IQ

scores. If the IQ scales loaded on a separate factor or factors from the factors on which the social domains loaded this would argue for their (the social intelligence domains) independence. Secondly, the multiple correlations and variances accounted for by the social intelligence domains with and without the general intelligence measures derived from a listwise regression of the SMI on these measures was compared. This analysis indicated the degree of variance in social performance accounted for by social intelligence separate from general intelligence. If this amount of variance is significant and substantive it will provide evidence that social intelligence is a distinctive domain. Thirdly, a partial correlation matrix with the sum scores of the social intelligence domain measures was computed with the variance accounted for by IQ removed. This matrix was computed for the two general IQ scores separately using a "Partial Corr" SPSS procedure. The partial correlations were compared against their respective whole correlations to assess the significance of the removal of IQ variance. Evidence for the independence of social competence from general intelligence would result if the correlations between the social intelligence domains remain essentially the same after the effects of general IQ have been removed.

Research Question No 4

How are the hypothesized domains of social competence related to gender identity? To answer this question analyses appropriate to both balanced and continous models of androgyny were calculated. With regard to the balance model a pearson product moment correlation matrix was calculated for the social intelligence domains and masculinity, femininity and androgyny calculated additively. Substantial and statistically significant correlations would indicate a strong relationship between social intelligence and gender identity. Since one issue in the area of gender identity is whether androgyny adds to the variance accounted for by masculinity and femininity, each of the social intelligence domains was regressed on a regression equation recommended by Lubinski, Tellegren and Butcher (1981, 1983) composed of the variables of masculinity, femininity, androgyny (calculated multiplicatively) and sex ($Y = a = b1$ (masculinity) + b2 (femininity) + b3 (sex) + b4 (androgyny)). If androgyny contributes signficantly to the regression equation it would indicate that androgyny is not a superflous concept.

To answer this question with regard to the categorical model of androgyny the Bem Sex-Role scale scores (Masculinity and Femininity) were transformed into z-scores and a median split for categorization into Bem's four sex-role categories was calculated. Analysis of variance and subsequent t-tests were then calculated to determine the significance of differences

among the four sex-role categories on the social intelligence domains. If there is significance difference among the four gender identity groups it will indicate that a personality trait is related to social intelligence.

Limitations of the Study

There are four main limitations of this study which should be addressed. The first concerns the fact that the data were collected once. This leaves open the possibility that the derived structure may not be representative of any individual over a period of time due to developmental change

The second limitation is that all data collection was by self-report. This leaves open the possibility of discrepancies between self-perceptions of social behavior and actual social behavior. In addition there are other potential hazards such as misunderstandings, faking, response sets (Ary, Jacobs & Razzveigh, 1979; Kerlinger, 1973). The combination of well constructed scales and careful interpretation help limit the dangers of this data type.

The third limitation was that a partial model of social intelligence was tested. The study did not attempt to account for all the potential domains that may comprise social intelligence. Conclusions from the study must therefore be limited to the scope of the study.

The fourth limitation is related to the population under study. The population for the study was comprised of direct service workers in the state mental hospital system. Furthermore the sample was over-represented in comparison to the general population, in terms of female and minority participants. Generalizations from this population to other populations must therefore be made with caution.

CHAPTER IV

RESULTS

The results are presented in five sections. In the first section, the demographic characteristics of the participants are reported. Then their scores on the measures used in this study are compared to findings from prior studies. Results pertinent to the first research question on the structure of social intelligence are reported in the second section. The third section reports on the relationship of the components of social intelligence to an independent measure of social maturity. Section four reports on the relationship of social intelligence and general intelligence. The final section reports on the relationship of psychological androgyny to social intelligence.

Characteristics of Participants

The demographic characteristics of the 188 participants in the study are reported in Table 3. The sample consisted of 24 males (13.3%) and 157 females (86.7%) ranging in age from eighteen to sixty-five with a mean age of 43.4. Slightly over 50% of the sample was a member of a minority group (non-Caucasian),

and over 62% were married or cohabiting. In terms of educational level, the majority of the participants (59.4%) had at least some college education with only 8.3% having completed less than the 12th grade. All participants were employees in a state funded mental hospital. Thirty percent were professionals and 70% paraprofessionals.

As is evident from these descriptive statistics the participants differ from the general population in being predominantly female. Minority participants are also overrepresented in terms of the general population. Both of these trends may be attributed to the job characteristics of the state mental hospital setting. The majority of positions in this system are low level, minimal educational requirement positions which are most often filled by females and minorities.

Table 4 reports the scores of participants in this study on the measures used in the study and compares those scores to scores reported in other studies. Appendix 4 reports an analysis of means and standard deviations by sex.

On the Social Interest Scale (SIS), participants in this study had a mean score of 9.63, with a standard deviation of 2.92. Crandall (1975) reports a mean of 8.43 and a standard deviation of 3.57 in a sample of 213 college students. Participants in this study had a statistically significant higher score on the SIS than did a comparison group. Given the occupation of the participants in this study, mental health

Table 3

Demographic Characteristics of Subjects

	N	%
Total Number of Subjects	188	
Sex (N=181)		
Males	24	13.3
Females	157	86.7
Did Not Report	7	
Race (N=181)		
Minority	94	52.0
Caucasian	87	48.0
Did Not Report	7	
Age (N=182)		
20 or less	3	1.7
21-25	9	5.0
26-30	18	10.0
31-35	28	15.4
36-40	24	13.2
41-45	34	18.7
46-50	30	16.5
51-55	11	6.1
56-60	19	10.0
61+	6	3.3
Did Not Report	6	

Table 3 - continued

	N	%
Educational Level (N=180)		
7th-9th grade	6	3.3
10th or 11th grade	9	5.0
12th grade, high school graduate	58	32.2
Some College	65	36.1
College Degree (B.A., etc.)	18	10.0
Graduate Degree	24	13.3
Did Not Report	8	
Marital Status (N=175)		
Married/Cohabiting	111	62.6
Single, Widowed, Divorced	64	37.4
Did Not Report	13	
Occupational Status (N=176)		
Professional	52	30.0
Parprofessional	124	70.0
Did Not Report	12	

Table 4

Comparisons of Sample Means and Standard Deviations of Population Under Study With Those of Other Samples

Scale	Current Scores	Scores of Other Studies
Social Interest Scale		Crandall, 1975
N	187	213
M	9.63	8.43
s.d.	2.92	3.57
$t = 3.63$, $p < .01$**		
Social Interest Index		Kaplan, 1978
Male		
N	23	131
M	133.41	123.11
s.d.	14.22	14.0
$t = 3.22$, $p < .01$*		
Female		
N	149	159
M	136.35	128.29
s.d.	12.35	12.8
$t = 5.63$, $p < .01$*		

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Social Self-Efficacy Scale		Marlowe, Weinberg and Hall, (1983)
N	187	96
M	23.55	24.07
s.d.	5.86	3.36
t = .95 N.S.**		
Texas Social Behavior Inventory		Helmreich and Stapp, 1974
N	184	500
M	59.37	57.27
s.d.	8.4	9.7
t = 2.8, $p < .01$*		

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Interpersonal Reactivity Index (Empathic Concern)		Davis, 1983
N	185	1061
M	29.54	26.04 - 28.67
s.d.	4.63	NA*
Interpersonal Reactivity Index (Perspective Taking)		Davis, 1983
N	183	1061
M	28.21	23.78 - 24.96
s.d.	4.43	NA*

*NA - Not available

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Perceived Decoding Ability		Zuckerman and Larrance, 1979
N	187	385
M	18.99	20.57
s.d.	11.68	9.99
t = 1.60 N.S.*		
Perceived Encoding Ability		Zuckerman and Larrance, 1979
N	186	385
M	12.54	12.30
s.d.	11.05	12.68
t = .23 N.S.*		

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Social Skill Survey--Peer		Marlowe and Weinberg (1983a)
N	186	182
M	58.85	57.77
s.d.	8.72	11.38
t = 1.02 N.S.**		
Social Maturity Index		Gough, 1966
N	183	2,482
M	49.02	50.43
s.d.	3.19	3.51
t = 5.64, p < .001*		

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Bem Sex Role Inventory--Masculinity Scale		Marlowe, Weinberg and Prange, 1983
N	184	101
M	55.3	52.5
s.d.	7.0	9.80
$t = 2.54$, $p < .05^{**}$		
Bem Sex Role Inventory--Femininity Scale		Marlowe, Weinberg and Prange, 1983
N	181	101
M	58.6	55.8
s.d.	7.21	10.45
$t = 2.42$, $p < .05^{**}$		

Table 4 - continued

Scale	Current Scores	Scores of Other Studies
Shipley-Hartford--Abstract Score		Sines, 1958
N	188	99
M	20.87	20.28
s.d.	9.55	10.76
t = .46 N.S.*		
Shipley-Hartford Vocabulary		Sines, 1958
N	187	99
M	25.12	27.72
s.d.	6.07	5.96
t = 3.47, $p < .001$*		

* t-test based on pooled variance formula of Downie & Heath (1965).

** t-test based on separate variance formula of Popham (1967).

workers, as compared to the general population nature of the comparison sample, this difference is understandable.

The mean and standard deviation scores of the Social Interest Index for participants in this study were 135.79 and 12.82, respectively. Kaplan (1978), in a study of 290 college undergraduates, found a significant difference between males and females on the SII. The male SII mean score was 123.11 with a standard deviation of 14.00. The mean SII score of females was 128.29 with a standard deviation of 12.80. Both male and female SII mean scores were also significantly higher than those of the comparison sample. Again, this is reasonable given the occupational choice of this study's responders.

The mean score and standard deviation on the Social Self-Efficacy Scale of these participants were 23.55 and 5.86, respectively. Marlowe, Weinberg and Hall (1983), in a study of 96 mental health workers, found a mean of 24.07 and a standard deviation of 3.36. There is no significant difference between the mean scores reported in these two studies.

With regard to the Texas Social Behavior Inventory A, Helmreich and Stapp (1974) reported means of 56.25 and 57.27 with standard deviations of 8.87 and 9.68 in samples of college students totaling 500. Participants in this study had a mean TSBI score of 59.37 with a standard deviation of 8.4. While these mean scores statistically were significantly different, the practical difference is minimal due to the combined sample size of 684.

On the Interpersonal Reactivity Index--Empathic Concern Scale, Davis (1983) reported means ranging from 26.04 to 28.67 in a sample of 1,061 college students. Davis, however, did not report standard deviations. Participants in this study had a mean score of 29.54 with a standard deviation of 4.63. While comparisons involving statistical significance cannot be made, participants in this study appear to be somewhat higher than the Davis sample on empathic concern. Given their occupational choice this is an understandable finding.

On the Interpersonal Reactivity Index--Perspective Taking Scale, participants in this study had a mean score of 28.21 and a standard deviation of 4.43. In comparison, the Davis study reported means ranging from 23.78 to 24.96 in his sample of 1,061 students. Participants in this study appear to be superior, although again the question of statistical significance cannot be resolved.

Participants in this study had a mean score of 18.99 (s.d. 11.68) on the Perceived Decoding Ability Scale 2. In their report on development of the scale, Zuckerman and Larrance (1979) report a mean of 20.57 (s.d. 9.99) in a sample of 385 adults. There is no statistical difference between these two mean scores.

The mean score on the Perceived Encoding Ability Scale 2 for participants in this study was 12.54 with a standard deviation of 11.65. Zuckerman and Larrance's (1979) original sample of 385

adults had a mean score of 12.30 with a standard deviation of 12.68. Again these mean scores are not significantly different.

Marlowe and Weinberg (1983a) reported a mean score of 57.77 (s.d. 11.38) on the Social Skills Survey--Peer Scale on a sample of 101 mental health workers. Participants in this study had a mean score of 58.85 with a standard deviation of 8.72. Again these mean score differences are not statistically significant.

Participants in this study scored a mean of 49.02 on the Social Maturity Index (SMI) with a standard deviation of 3.19. The comparison sample had a mean score of 50.43 with a standard deviation of 3.51. While this difference is statistically significant, it is of little practical difference given the sample size of 2,665.

On the Bem Sex Role Inventory--Masculinity Scale, this study's sample had a mean score of 55.3 and a standard deviation of 7.0. The comparison sample had a mean score of 52.5 and a standard deviation of 9.8. The difference in mean scores was significantly different, indicating the sample population saw themselves as more masculine than a comparison group. Similar results were found for the femininity scale, with a mean of 58.6 for this sample compared to a mean of 55.8 for the comparison sample. While these differences are significantly different statistically, given the large sample size one should be cautious about conclusions that this study's sample is particularly different from comparison samples.

On the Shipley-Hartford Abstract Scale participants in this study had a mean score of 20.87 with a standard deviation of 9.55. The comparison sample had a mean score of 20.28 with a standard deviation of 10.76. There was no significant difference between these two scores.

On the Shipley-Hartford Vocabulary participants in this study had a mean score of 25.12 with a standard deviation of 6.07. The comparison sample had a mean score of 27.72 with a standard deviation of 5.96. The comparison group was somewhat higher in verbal intelligence than the sample for this study.

Results of the First Question

The first question addressed in this study was "what was the internal domain structure of social intelligence and how did the derived domain structure compare to the hypothesized domain structure?"

The hypothesized domain structure consisted of four constructs: social interest, social self-esteem, social cognition abilities and social skill or behavioral repertoire. As described in the methods section, this question was addressed through the use of first and second order factor analyses. This procedure was selected because of the factorial complexity of the measures used in the study. Results of the first order factor analyses are reported in Appendix 5 for the Social Interest Index (SII), Social Interest Scale (SIS), Texas Social Behavior Inventory A (TSBIA), Social Self-Esteem Scale (SSES), Perceived Decoding Ability Scale 2 (PDA2), Interpersonal Reactivity Index (IRI),

Social Skills Survey--Peer (SSSP), and Perceived Encoding Ability Scale 2 (PEA2). Appendix 5 also details the criteria used for first order factor structure selection. Appendix 6 reports the alpha reliabilities for each first and second order factor.

Table 5 presents the results of the second order factor analysis. The initial factor extraction identified six factors with eigenvalues greater than 1.0. Based on this finding, one through six factor solutions were calculated. The rotated six factor matrix was rejected because of numerous splits and limited interpretability. Of the remaining alternatives the five factor solution was selected as the most logical and interpretable. As Figure 2 illustrates, the scree test for the five factor solution shows a clear break at the fifth factor. As Table 5 indicates, this solution accounts for 41.2% of the variance after rotation. While Factor 1 accounts for a greater percentage of variance than any of the other factors, 13.6%, it does not account for such a disproportionate amount of variance that it could be called a general factor. Rather, these results indicate the presence of five common factors.

Factor 1 (SOCIQFAC 1) is composed of first-order factors SIIFAC3, SIIFAC2, TSBIFAC1, SIIFAC1 and SESSFAC1. As stated above, this factor comprises 13.6% of the variance with an eigenvalue of 2.31. The individual items comprising Factor 1 are listed in Table 6 under each of their first order factors. An examination of these individual items indicates that they measure level of interest in and concern for other people as well as

Table 5

Second Order Factor Analysis: Factor Structure With Loadings

	SOCIQ Factor 1	SOCIQ Factor 2	SOCIQ Factor 3	SOCIQ Factor 4	SOCIQ Factor 5
SIIFAC2	.70				
SIIFAC3	.68				
TSBIFAC1	.63				
SIIFAC1	.47				
SESSFAC1	.38				
SKFAC1		.84			
SKFAC3		.78			
SKFAC2		.64			
PDAFAC2			.75		
PDAFAC1			.62		
PEAFAC1				.60	
IRIFAC1				.48	
PEAFAC2				.48	

Table 5 - continued

	SOCIQ Factor 1	SOCIQ Factor 2	SOCIQ Factor 3	SOCIQ Factor 4	SOCIQ Factor 5
SESSFAC2					.53
IRIFAC2					.47
TSBIFAC2					.47

Summary Statistics (After Rotation)

Factor	Eigenvalue	Percent of Variance	Cummulative Percent
1	2.31	13.6	13.6
2	2.18	12.8	26.4
3	1.15	6.8	33.2
4	.77	4.5	37.7
5	.60	3.5	41.2

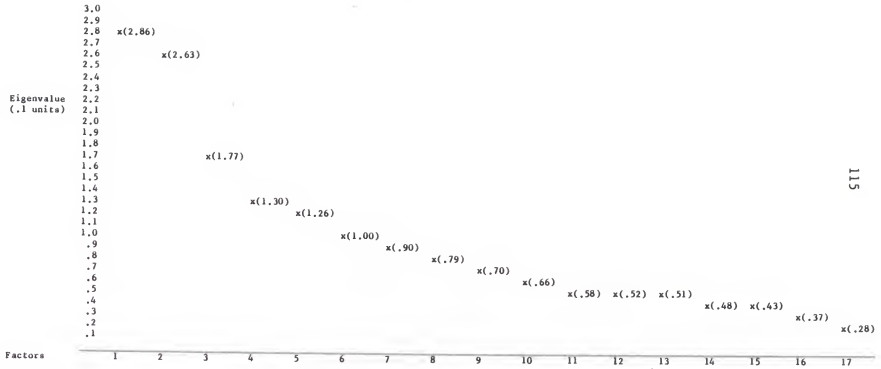


Figure 2

Second Order Factor Analysis: Scree Test

Table 6

Items for SOCIQ FACTOR 1: Prosocial Attitude

SIIFACT3
I am often turned to for advice.
I do my best most of the time.
I believe a man and a woman can be both lovers and friends.
I have warm relationships with some people.
I feel jobs are important because they make you take an active part in the community.
School to me is more than just facts from books.
I prefer doing things with other people.
Finishing a job is a real challenge to me.
I am considered a hard worker.
I wonder if I will be able to do all I want in my lifetime.
SIIFACT2
I have many friends.
I am usually nominated for things at work or school.
I usually like people I have just met.
My friends are very important to me.

Table 6 - continued

SIIFACT2 (Continued)
I enjoy being in clubs.
My plans generally turn out the way I want them to.
I feel I have a place in the world.
I seldom feel limited in my abilities.
TSBIFACT1
I would describe myself as self-confident.
I feel confident in my appearance.
I am a good mixer.
When I am in disagreement with other people, my opinion usually prevails.
I would describe myself as one who attempts to master situations.
Other people look up to me.
I enjoy social gatherings just to be with people.
I feel comfortable being approached by someone in a position of authority.
I have no doubts about my social competence.

Table 6 - continued

SIIFACT1
I feel rules are necessary.
Once I decide something, I find a way to do it.
I seldom feel the need to make excuses for my behavior.
I feel a man and a woman have equally important roles in a marriage.
I view marriage favorably.
I feel family decisions need to be made jointly.
As far as I am concerned, marriage is for life.
I believe liking your work is more important than the salary.
SESSFACT1
When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.
If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
I have acquired my friends through my personal abilities at making friends.

confidence and enjoyment of social situations. This conclusion is supported by examining the original scales from which they were extracted; the Social Interest Index, Social Self-Efficacy Scale and Texas Social Behavior Inventory. Based on this content analysis, it may be concluded that Factor 1 represents a "prosocial attitude." This prosocial attitude represents both a level of interest in and concern for others as well as a sense of social self-efficacy. From these results it may be argued that interest and efficacy are closely linked. This argument is supported by the fact that Factor 1 retained the same structure in the more fragmented six factor solution.

Based on this factor solution, one dimension of social intelligence is a prosocial attitude. The factor combines both social interest and social self-efficacy. It represents a positive perception of social interaction.

The second factor of the second order analysis is comprised solely of the three factors derived from the Social Skills Survey--Peer. It comprises 12.8% of the variance on social intelligence with an eigenvalue of 2.18. These items are listed by first order factor in Table 7. An item examination will indicate these three first order factors represent social performance skills which can be behaviorally observed. For this reason this factor is labeled "social skills."

The third factor extracted in this solution is comprised of Factors 1 and 2 of the PDA. Since the PDA is a measure of

Table 7

Items for SOCIQ FACTOR 2: Social Skills

SKOTHFACT1

1. Responding to the Feelings of Others
2. Expressing Appreciation
3. Asking for Help
4. Expressing Encouragement
5. Listening
6. Expressing a Compliment
7. Giving Instructions
8. Expressing Affection
9. Responding to Praise

SKOTHFACT3

1. Carrying on a Conversation
2. Starting a Conversation
3. Ending a Conversation

SKOTHFACT2

1. Expressing a Complaint
2. Expressing Anger
3. Persuading Others

---

empathic ability, this factor clearly represents empathy skills. Factor 3 accounts for 6.8% of the variance and has an eigenvalue of 1.15. The items comprising factor 3 are listed in Table 8 by first order factor. Since this factor is so clearly an empathic factor, it is labeled "empathy skills."

The fourth factor extracted from the analyses is comprised of the two PEA factors and the first IRI factor. This factor accounts for 4.5% of the variance with an eigenvalue of .77. Table 9 lists the individual items under each of their first order factors. An examination of these items reveals they all refer either to emotional expressiveness or high sensitivity to the affective states of others. As such Factor 4 represents an apparent personality trait which was not hypothesized in the original model. Since this personality trait describes the degree to which a person is simultaneously emotionally expressive and sensitive, it is labeled "emotionality." The argument that this factor is a personality trait is supported by the fact that when the SIS was included in the second order factor analysis for purposes of conceptual clarification, it loaded on this factor throughout various solutions although not significantly. The SIS asks respondents to describe their personality along selected adjectives.

The fifth factor extracted in the solution is comprised of the TSBIFAC2, IRIFAC 2 and SESSFAC 2. This factor accounts for 3.5% of the variance with an eigenvalue of .60. An examination of the items as listed in Table 10 reveals they refer to a lack of

Table 8

Items for SOCIQ FACTOR 3: Social Cognition

PDAFACT2

1. I can often tell what a person is going to say before he or she says it.
2. When someone is lying, I can usually tell from his or her facial expression.
3. I think I have a lot of insight into people.

PDAFACT1

1. I can usually tell when someone feels hostile from the person's tone of voice.
2. I can usually tell when someone is angry from his or her facial expression.
3. I usually can tell when someone is surprised from his or her facial expression.
4. When someone tries to please me, I can usually tell from his or her tone of voice.

Table 8 - continued

PDAFACT1 (Continued)

5. I can usually tell when a person approves of something from his or her facial expression.
6. When someone feels grateful, I can usually tell from his or her facial expression.
7. I can usually tell when someone feels afraid from the person's facial expression.
8. I usually try very hard to understand how others feel.
9. I can usually tell when someone feels guilty from his or her tone of voice.

Table 9

Items for SOCIQ FACTOR 4: Emotionality

PEAFACT1

1. When I want to please someone, people can usually tell from my tone of voice.
2. People can usually tell when I am afraid from my facial expression.
3. People can usually tell when I feel guilty from my facial expression.
4. People can usually tell when I approve of something from my facial expression.
5. When I am grateful, people can usually tell from my facial expression.
6. Often when I try not to let on how I feel, people seem to catch on anyway.
7. When I tell a lie, people usually know it from my tone of voice.
8. When I am surprised, people can usually tell from my facial expression.
9. I cry easily in sad movies.

IRIFACT1

1. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Table 9 - continued

IRIFACT1 (Continued)

2. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
3. I am often quite touched by things that I see happen.
4. I believe that there are two sides to every question and try to look at them both.
5. I often have tender, concerned feelings for people less fortunate that me.
6. I would describe myself as a pretty soft-hearted person.
7. I sometimes try to understand my friends better by imagining how things look from their perspective.
8. When I see someone being taken advantage of, I feel kind of protective towards them.
9. I try to look at everybody's side of a disagreement before I make a decision.

PEAFACT2

1. People can usually tell when I feel hostile from my tone of voice.
2. People can usually tell when I feel hostile from my facial expressions.

Table 10

Items for SOCIQ FACTOR 5: Social Anxiety

SESSFACT1

1. I do not handle myself well in social gatherings.
2. It is difficult for me to make new friends.

IRIFACT2

1. Sometimes I don't feel very sorry for other people when they are having problems.
2. I sometimes find it difficult to see things from the "other guy's" point of view.
3. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
4. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
5. Other people's misfortunes do not usually disturb me a great deal.

Table 10 - continued

TSBIFACT2

1. I am not likely to speak to people until they speak to me.
2. When in a group of people, I have trouble thinking of the right things to say.
3. When in a group of people, I usually do what the others want rather than make suggestions.
4. I cannot seem to get others to notice me.
5. I would rather not have very much responsibility for other people.
6. I would describe myself as indecisive.

confidence and the presence of anxiety in the social situations. In the two or the three factor solutions, Factor 5 will load with Factor 1, indicating the presence of an efficacy dimension in the factor. However, since Factor 1 comprises both social interest and social self-efficacy, it is conceptually clearer to distinguish these two factors. For this reason, Factor 5 has been labeled "social anxiety."

In review, the second order factor analysis yielded five interpretable factors. Two of these factors, Factor 2 (Social Skills) and Factor 3 (Empathy Skills), are the same as the hypothesized domains of behavioral repertoire and social cognition. Factor 1 (prosocial attitude) represents a combination of two of the hypothesized domains, social interest and social self-efficacy. Since the first order factors comprising Factor 1 always loaded together even in more complex factor solutions, these results strongly indicate that social interest and social self-efficacy are not separate or distinctive domains. Instead, they represent a positive attitude toward oneself and toward others. Factor 5 represents a social anxiety domain which appears to be the obverse of self-efficacy. As such it represents a modification of the hypothesized domains. Factor 4 represents a dimension of social intelligence that was not originally hypothesized. As explained above, Factor 4 represents a personality trait that can be labeled as emotionality. One dimension of social intelligence therefore appears to be emotional expressiveness and sensitivity.

The final analysis undertaken to examine the structure of social intelligence was an examination of the cluster pattern of the five domains. Accordingly a cluster analysis was conducted. The means for this analysis are reported in Table 11 and the cluster pattern itself is shown in Figure 3. As the ANOVA's reported in Table 12 indicate, these clusters are significantly different from one another. Persons assigned to cluster 1 scored above the mean on all domains except social anxiety. Persons assigned to cluster 2 score below the mean on all domains except social anxiety. Persons in cluster 3 however were above the mean on prosocial attitude and emotionality but below on the two skill domains and social anxiety. From these data we can conclude that there are three types of socially intelligent persons. Group 1 consists of persons with positive self-images, good skills, high social interest and social sensitivity. This group is not characterized by high social anxiety. Group 2 is almost the exact opposite of Group 1. Group 3 persons however have high interest and social sensitivity, are not socially anxious, but feel they lack skills. Table 13 reports the demographic characteristics of these three clusters. As reported in the table, these groups do not differ on age, sex, race, educational level, job status or marital status.

In summary, two domains of the hypothesized model of social intelligence, behavioral repertoire and social cognition, were supported. Two other domains, social interest and social self-efficacy, were found in a modified form. Finally, a fifth

Table 11

Cluster Means

Cluster	Prosocial Attitude	Social Skill	Empathy Skills	Emotionality	Social Anxiety
1	3.67	7.91	4.00	.34	- .63
2	-18.30	-2.26	-1.72	-4.25	1.90
3	11.09	-7.66	-3.39	3.20	-0.84

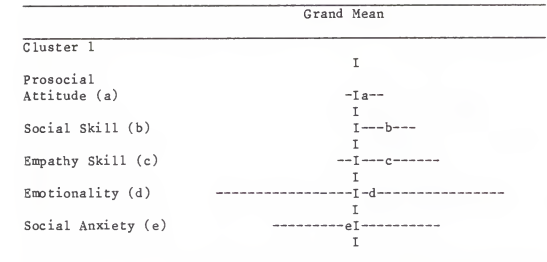


Figure 3

Cluster Pattern of Social Intelligence Domains

Table 12

Analysis of Variance: Clusters by Social Intelligence Domains

Source	Degrees of Freedom	Mean Squares	MS	Pr>E
Domain: Prosocial Attitude				
Cluster	2	12966.41	185.23	0.000
Error	185	70.00		
Total	187			
Domain: Social Skill				
Cluster	2	4236.06	78.47	0.000
Error	184	53.99		
Total	186			
Domain: Empathy Skill				
Cluster	2	1019.92	20.23	0.000
Error	184	50.42		
Total	186			

Table 12 - continued

Domain: Emotionality				
Cluster	2	785.57	11.57	0.000
Error	185	67.91		
Total	187			
Domain: Social Anxiety				
Cluster	2	129.75	3.69	0.013
Error	185	35.16		
Total	187			

Table 13

Chi-Square Analysis of Cluster Groups By Demographic Characteristics

Demographic Variable	Pearson Chi Square	D.F.	Probability
Age	12.31	18	.83
Sex	1.21	2	.55
Race	1.08	2	.58
Educational Level	12.49	10	.25
Ocupational Level	13.12	14	.52
Marital Status	0.74	2	.69
Shipley Verbal	2.67	4	.61
Shipley Abstract	2.13	4	.71

domain, emotionality, was found which was not originally hypothesized. Persons appear to fall into one of three groups with regard to social intelligence--a superior group, an inferior and a mixed.

Results of the Second Question

The second question the study addressed was "what is the relationship of the social intelligence domains identified in this study to social maturity as measured by the Social Maturity Index (SMI) of the California Psychological Inventory?" Two analyses were conducted to answer this question. In the first analysis, pearson product moment correlations were calculated in order to assess the strength, direction and statistical significance of any relationship. These results are reported in Table 14. In the second analysis the five social intelligence domains were regressed on the SMI to determine the relative contribution of these domains and the variance in social maturity for which they account. These results are reported in Table 15.

The results of the correlational analysis indicate that social maturity is moderately related only to prosocial attitude and emotionality domains. The results of the regression analysis indicate that two domains of social intelligence, prosocial attitude and emotionality, account for nine percent of the variance in social maturity. In summary, social intelligence as defined in the study appears to be minimally related to social maturity as measured by the SMI.

Table 14

Correlation Matrix: Social Intelligence Domains and Social Maturity Index (N=179)

	Prosocial Attitude	Social Skill	Empathy Skill	Emotionality	Social Anxiety	Social Maturity
Prosocial Attitude	1.00	.07	.03	.29^{+++}	-.23^{+++}	.25^{++++}
Social Skill		1.00	.35^{+++}	-.10	-.08	-.02
Empathy Skill			1.00	.03	-.07	-.05
Emotionality				1.00	-.05	.24^{+++}
Social Anxiety					1.00	-.10
Social Maturity						1.00

$^{+}$ .05

$^{++}$ .01

$^{+++}$ .001

$^{++++}$ .0001

Table 15

Regression of SMI on Social Intelligence Domains

Domain	b	B	R	R^2	SE
			.31	.09	3.07
Prosocial Attitude	.044	.199	.25	.06	
Emotionality	.068	.184	.06	.03	
Constant	49.0				

Table 15 - continued

Domain	ANOVA	DF	SS	MS	F	p
	Regression	2	174.0	87.0	9.21	.0002
	Residual	176	1662.3	9.4		
Prosocial						
Attitude					2.65	.009
Emotionality					2.46	.015
Constant					213.3	.0000

Results of the Third Question

The third question this study asked was "whether or not social intelligence was a separate domain from general intelligence?" To answer this question three analyses were conducted. First a factor analysis was conducted to determine the factor pattern of the five social intelligence measures and the two general intelligence measures. Second, social intelligence correlation matrices were calculated with and without general intelligence partialed out. The difference, if any, between full and partial correlation matrices would indicate the relative importance of general intelligence. Finally listwise regressions were calculated to determine the relative contributions of general intelligence and social intelligence to social maturity.

As stated above the first analysis was an orthogonal factor analysis, using the two general intelligence measures and the five social intelligence measures. The initial factor extraction yielded three factors with eigenvalues greater than 1.00. In accord with the factor analysis procedures that were used for question one, one and two factor solutions were also calculated. Of the three calculated solutions the three factor was selected as the most interpretable. Table 16 reports the results of the three factor solution and Table 17 reports the unrotated factor matrix. As Table 16 indicates the first factor is comprised of the two general intelligence measures. The second factor is comprised of the prosocial attitude and emotionality factors, with social anxiety loading $<.30$ on this factor. This second

Table 16

Factor Analysis (Rotated): General and Social Intelligence Measures (Loadings <.30 not reported)

Scale	Factor 1	Factor 2	Factor 3
Shipley Verbal	.87		
Shipley Abstract	.65		
Prosocial Attitude		.89	
Emotionality		.34	
Social Anxiety			
Social Skills			.73
Empathy Skills			.39

Summary Statistics (After Rotation)

Factor	Eigenvalue	Percent of Variance	Cumulative Variance
1	1.22	17.6	17.6
2	.98	14.0	31.6
3	.67	9.6	41.3

Table 17

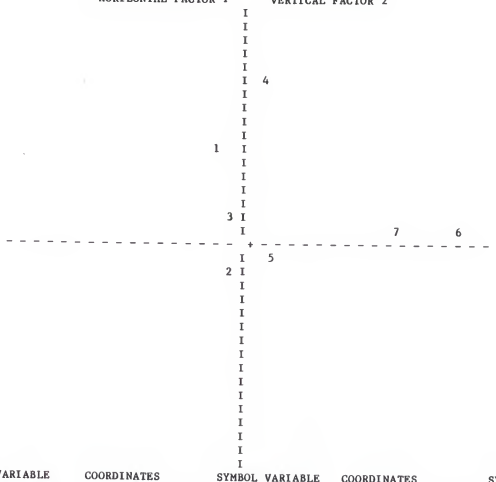
Unrotated Factor Matrix: General and Social Intelligence Measures (Loading <.30 not reported)

Scale	Factor 1	Factor 2	Factor 3
Shipley Verbal	.87		
Shipley Abstract	.65		
Prosocial Attitude		.89	
Social Anxiety		.32	
Emotionality			
Social Skills			.71
Empathy Skills			.37

factor is clearly comprised of social self-perception scales. Factor three is comprised of the two skills factors: social skills and empathy skills. In sum general intelligence, social self-perception and social skills are three separate factors. Based on this analysis general intelligence is clearly a separate domain. However social intelligence does not appear to comprise a single domain but rather two distinct domains. This conclusion is supported by an examination of the factor plots in Figure 4. Items 7 and 6 (Shipley abstract and verbal respectively) are clearly separate from the other factors.

The zero order correlation analysis is reported in Table 18. The correlation pattern supports the factor analysis reported earlier in that the two skills domain are significantly correlated with each other, $r = .34$. Furthermore emotionality and social anxiety are significantly correlated with prosocial attitude, $r = .31$, $-.22$, respectively.

The position that general intelligence is distinct from social intelligence is supported in all cases except one. With this one exception all correlations were low and non-significant. The one significant relationship was between social anxiety and the Shipley Verbal, $r = -.19$, $p < .01$. While this relationship was not strong it does indicate that verbal facility is related to anxiety in social situations. In contrast to these low correlations the relationship between the two general intelligence measures, abstract and verbal was strong and significant, $r = .59$, $p < .0001$.



SYMBOL	VARIABLE	COORDINATES	SYMBOL	VARIABLE	COORDINATES	SYMBOL	VARIABLE	COORDINATES
1	Prosocial Attitude	(-.11450, .37023)	2	Social Skill	(-.01162, -.10226)	3	Empathy Skills	(-.03191, .07345)
4	Emotionality	(.05976, .71012)	5	Social Anxiety	(.10458, -.3194)	6	Verbal IQ	(.87388, .01210)
7	Abstract IQ	(.65231, .03513)						

Figure 4

Factor Plots: General and Social Intelligence Variables

Table 18

Correlation Matrix (Zero Order): Social and General Intelligence Measures

	Prosocial Attitude	Social Skills	Empathy Skills	Emotionality	Social Anxiety	Shipley Verbal	Shipley Abstract
Prosocial Attitude	1.00	.06	.03	.31++++	-.22+++	-.04	-.04
Social Skills		1.00	.34++++	-.10	-.07	-.02	.02
Empathy Skills			1.00	.04	-.06	-.03	-.04
Emotionality				1.00	-.04	.07	.04
Social Anxiety					1.00	-.19++	-.09
Shipley Verbal						1.00	.59++++
Shipley Abstract							1.00

\+ $p < .05$
++ $p < .01$
+++ $p < .001$
++++ $p < .0001$

The hypothesis that general and social intelligence are independent domains is further supported by the partial correlation matrices reported in Tables 19 and 20. In Table 19 the Shipley Verbal score was partialed out of the correlations of the social intelligence measures. Table 20 reports this same partialing for the Shipley Abstract scores. In neither case did removal of the Shipley score change in any significant way the correlation pattern with respect to direction or strength. This indicates that the relationship between the social intelligence domains is the same regardless of the presence or absence of general intelligence. In other words general intelligence does not play a significant part in this relationship.

The listwise regression analysis reported in Table 21 indicates the amount of variance accounted for on the SMI by the addition of the general intelligence variables in their various combinations to the social intelligence variables. As Table 21 indicates, the addition of the general intelligence variables does not substantially add to the accounted variance. Table 22 reports the multiple correlations of the SMI with prosocial attitude and emotionality with general intelligence partialled out. As the data in Table 22 indicates, the partialing out of intelligence does not reduce the amount of social maturity variance that is accounted for by social intelligence.

Finally the chi-square analysis of the clusters reported in Table 13 indicates that the three cluster groups do not differ significantly among themselves in terms of general intelligence.

Table 19

Correlation Matrix: Social Intelligence Measures, Shipley Verbal Partialed Out

	Prosocial Attitude	Social Skill	Empathy Skill	Emotionality	Social Anxiety
Prosocial Attitude	1.00	.06	.03	.33++++	.25++++
Social Skill		1.00	.34++++	-.10	.08
Empathy Skill			1.00	.04	.07
Emotionality				1.00	.03
Social Anxiety					1.00

\+ p< .05
++ p< .01
+++ p< .001
++++ p< .0001

Table 20

Correlation Matrix: Social Intelligence Measures, Shipley Abstract Partialed Out

	Prosocial Attitude	Social Skill	Empathy Skill	Emotionality	Social Anxiety
Prosocial Attitude	1.00	.06	.03	.32++++	.24++++
Social Skill		1.00	34++++	-.10	.08
Empathy Skill			1.00	.04	.07
Emotionality				1.00	.03
Social Anxiety					1.00

\+ p< .05
++ p< .01
+++ p< .001
++++ p< .0001

Table 21

Comparison of SMI Regressions on Prosocial Attitude and Emotionality With and Without General Intelligence Measures

Equation	Variable	R	R^2
1	Prosocial Attitude, Emotionality	.31	.09
2	Shipley Abstract Prosocial Attitude, Emotionality	.33	.11
3	Shipley Verbal Emotionality, Prosocial Attitude	.35	.13
4	Shipley Verbal and Abstract Emotionality, Prosocial Attitude	.35	.13
5	Shipley Verbal	.19	.04
6	Shipley Abstract	.12	.01
7	Shipley Verbal & Abstract	.19	.04

Table 22

Multiple Correlations and Partial Correlation Matrix: SMI, Prosocial Attitude and Emotionality Variables with Shipley Verbal and Abstract Partialed Out

Combination	Variables	R	R^2
1	SMI - Prosocial Attitude, Emotionality	.31	.09
2	SMI - Prosocial Attitude, Emotionality (Abstract, Verbal)	.30	.09
3	SMI - Prosocial Attitude, Emotionality (Verbal)	.30	.09

These data offer further evidence that general intelligence is not related to social intelligence.

Results of the Fourth Question

The fourth research question asked "what was the relationship of androgyny to social intelligence?" A key issue in answering this question is how androgyny is defined. There are two basic definitions in use. One is that androgyny is a balance of masculine and feminine characteristics. This definition is termed the balance model. Statistically this definition is operationalized as a continous score and is therefore best analyzed by correlational techniques. A second definition of androgyny is that it consists of high levels of both masculinity and femininity. This is the categorical approach, so named since it yields a categorical score, and is best analyzed by analysis of variance techniques. To answer this question therefore several analyses were conducted. First, to address the relationship of the balance model of androgyny to social intelligence, pearson product moment correlations were computed between continuous measures of masculinity, femininity, and androgyny. These correlations indicate the direction, strength and statistical significance of any relationship. Then, to determine the contribution of androgyny to social intelligence, multiple regression analyses were conducted. Next, to assess the relationship of the categorical model of androgyny and social intelligence, one-way analyses of variance and subsequent t-tests were conducted to determine if there were significant differences

between the four-fold gender identity categories (androgyny, masculinity, femininity and undifferentiated) and each of the five social intelligence domains. Finally, the three social intelligence cluster groups reported earlier were compared in terms of their distribution patterns on the gender identity.

Table 23 reports the results of the correlation analysis for the balance model of androgyny. Two of the social intelligence domains were strongly and significantly related to gender identity in the expected direction. Prosocial attitude was positively related to psychological masculinity, $r = .50$, $p < .0001$; femininity, $r = .43$, $p < .0001$ and androgyny, $r = .56$, $p < .0001$. Emotionality was positively related to masculinity, $r = .16$, $p < .05$; femininity, $r = .36$, $p < .0001$ and androgyny, $r = .27$, $p < .001$. Social anxiety on the other hand was negatively related to psychological masculinity, $r = -.14$, $p =$ ns; femininity, $r = -.17$, $p < .05$ and androgyny, $r = -.19$, $p < .05$. The social skills and empathy skills domains however were not significantly related to gender identity.

Table 24 reports the results of the analysis to determine the contribution to social intelligence of androgyny over and above the contribution by masculinity and femininity. As described in chapter three two regression equations were calculated. The first equation regressed the social intelligence domains separately on masculinity, femininity and sex. The second equation regressed the social intelligence domains separately on masculinity, femininity, sex, and androgyny defined as an

Table 23

Correlation Matrix: Continuous Gender Identity Measures and Social Intelligence Domains (N=180)

	Masculinity	Femininity	Androgyny
Prosocial Attitude	.50++++	.43++++	.56++++
Social Skills	-.04	.00	-.02
Empathy Skills	-.14	-.10	-.14
Emotionality	.16+	.36++++	.27+++
Social Anxiety	-.14	-.17+	-.19+

+ .05

++ .01

+++ .001

++++ .0001

Table 24

Comparison of Multiple R's and R^2's for Regression Equations With and Without Androgyny

Emotionality	Regression A (Masculinity, Femininity, Sex)		Regression B (Masculinity, Femininity, Sex, Androgyny)	
	R	R^2	R	R^2
Prosocial Attitude	.54	.30	.55	.30
Social Skill	.01	.00	.06	.00
Empathy Skill	.15	.02	.15	.02
Emotionality	.38	.14	.38	.15
Social Anxiety	.21	.04	.25	.06

interaction of masculinity and femininity. The multiple R's and R2's for each domain and each equation are reported in Table 24. As is evident from the Table, the fuller equation does not account for any substantive increase in variance over the more restricted equation.

The results of the correlational analysis reported in Table 23 clearly indicate that a substantive relationship exists between the prosocial attitude, emotionality and social anxiety domains of social intelligence. These results are all in the expected direction with the three psychologically healthy categories of gender identity; masculinity, femininity and androgyny, being positively related to the two positive domains of social intelligence; prosocial attitude and emotionality, and negatively related to the one negative domain of social intelligence; social anxiety. However the regression analysis reported in Table 24 indicates that this relationship is primarily determined by masculinity, femininity and sex and that androgyny does not significantly add to the variance accounted for by these three other variables.

To further explore the relationship of androgyny and social intelligence an examination of the categorical model of androgyny was conducted via analysis of variance techniques and cluster analysis. The analysis of variance reported in Table 25 serves to confirm the interpretation of the results of Table 23. Five one-way ANOVA's were conducted using the five domains of social intelligence as dependent variables. Three of the five ANOVA's

Table 25

Gender Identity by Social Intelligence Domains: One-Way Analysis of Variance

Source	DF	SS	MS	F	PR>F
Domain: Prosocial Attitude					
Gender Identity	3	7140.4	2380.1	13.8	.0000
Error	184	31742.5	172.5		
Total	187	38882.9			
Domain: Social Skills					
Gender Identity	3	96.4	32.1	.32	.81
Error	183	18309.3	100.1		
Total	186	18405.7			

Table 25 - continued

Source	DF	SS	MS	F	PR>F
Domain: Empathy skills					
Gender Identity	3	231.5	77.2	1.27	.28
Error	183	11085.6	60.6		
Total	186	11317.1			
Domain: Emotionality					
Gender Identity	3	1104.2	368.1	5.2	.0018
Error	184	13030.3	70.8		
Total	187	14134.5			
Domain: Social Anxiety					
Gender Identity	3	323.2	107.7	3.078	.0289
Error	184	6441.1	35.0		
Total	187	6764.3			

yielded significant F's. The t-tests of these differences, reported in Table 26, indicate that the undifferentiated group was significantly different from the androgynous and feminine groups on prosocial attitude. While the masculine group did not reach a level of statistically significant difference from the undifferentiated group, masculinity mean scores were highly similar to androgynous and feminine mean scores. With a larger N, masculine scores would have reached statistical significance. This same pattern is repeated for social anxiety. In terms of emotionality the androgynyous group was significantly different from the undifferentiated group but similar to the masculine and feminine group. While masculine, feminine and androgynous groups do not differ from each other in terms of the dependent variables of the social intelligence domains, the undifferentiated group does differ. Also the pattern of mean scores is in line with the correlational analysis. The undifferentiated group scores much lower on prosocial attitude, social skill, empathy skill and emotionality than do the remaining three groups while scoring much higher on social anxiety. The cluster analysis, reported in Table 27, indicates that androgynous persons predominantly belong to the superior or mixed level social intelligence cluster while the undifferentiated group predominantly belong to the inferior social intelligence cluster.

Table 26

T-Tests: Gender Identity Categories by Social Intelligence Domains

	Androgyny	Masculinity	Femininity	Undifferentiated
Prosocial Attitude	5.77[a]	-1.20[c]	-3.03[a]	-9.04[b]
Social Anxiety	-1.83[a]	3.26[c]	-.97[a]	3.74[b]
Emotionality	1.05[a]	-1.19[c]	.30[c]	-2.11[b]

Note: Subscript a indicates significant difference from subscript b at .05 level and subscript c indicates no significant difference between categories.

Table 27

Chi-Square Analysis: Gender Identity Category Percent By Clusters (N=188)

	Cluster		
	1	2	3
Androgynous	46	11	43
Masculine	42	33	25
Feminine	36	32	32
Undifferentiated	33	57	10

Summary Statistics	Value	D.F.	Prob.
Pearson Chi Square	37.57	6	.0000

CHAPTER V
DISCUSSION

This chapter is divided into five sections. The first four sections discuss the results of the data analysis for each of the four research questions posed in chapter one. The final section discusses the overall implications of the results.

Discussion of the First Question

The first research question sought to determine the domain structure of social intelligence. Based on a review of the literature a hypothetical model was developed in chapter two consisting of four components: social interest, social self-efficacy, social cognition and behavior repertoire. Assessment instruments were then selected and administered which measured each of these hypothesized domains.

The results of the second-order factor analysis reported in chapter four yielded five separate factors or domains. As reported in chapter four these five domains were labeled prosocial attitude, social skills, empathy skills, emotionality and social anxiety. These findings support the argument that

social intelligence is multidimensional as advanced by Ford (1982) and Gerdeman (1975). Based on these results it can be concluded that social intelligence is clearly a multidimensional or factorially complex construct.

Of the derived second order factors or domains, two conformed to the model's hypothetical expectations. Both of these derived domains, empathy and social skill, were equivalent to the hypothesized skill domains of social cognition and behavioral repertoire respectively. The empathy domain consisted of skills and abilities related to the cognitive and affective understanding of another person's experience. The social skills domain encompassed those behavioral and observable skills which facilitate social interaction, i.e. encouraging responses, asking appropriate questions, etc. As both the hypothetical model and the empirical results indicated, abilities and skills comprise distinct domains of social intelligence. This finding is consistent with many of the definitions of competence discussed in chapter one and supports the importance of social skills training.

The derived "prosocial attitude" domain was not hypothesized as such in the model developed for the study. Instead, distinctive social interest (social motivation) and social self-efficacy domains were hypothesized. The results of this study however indicate that these two domains are more unitary than distinctive.

Since the two constructs have developed from different origins (social interest from the work of Alfred Adler and his associates; social self-efficacy from Ruth Wylie, Albert Bandura and associated persons) there has been little theoretical discussion or empirical research regarding the degree of mutual overlap between these two constructs. The data reported in this study indicates that the two constructs share considerable overlap and may be considered one domain. Other empirical studies report results that point to this same conclusion. For example, Mozdzierz and Semyck (1980a) found that persons high in social interest were also high in success motivation while persons low in social interest were more concerned with failure avoidance. Hjelle (1975) found that the higher the level of social interest, the greater the degree of internal locus of control. Crandall (1975) and Paloutzian, Jackson and Crandall (1978) found social interest significantly and positively correlated with perceived meaningfulness of life. Parks (1971) found significant correlations between social interest and a number of measures of psychological well-being. Among the well-being measures was a measure of self-esteem which was correlated .33 with level of social interest. Crandall and his colleagues (Crandall & Kytonen 1980; Crandall & Putnam, 1980; Crandall & Reimanis 1976) also found a significant positive relationship between level of social interest and several measures of psychological well-being. Crandall and Lehman (1977)

found a significant negative correlation between level of social interest and level of psychological maladjustment.

Theoretically there is also support for the position that social interest and social self-efficacy are highly related constructs. Bickhard and Ford (1976) define social interest as "man-as-socius". By this they mean social interest is striving for a form of community based on an individual's sense of meaningfulness of him or herself. The concept of self-meaningfulness is very similar, if not identical to that of self-efficacy. Social interest, as defined by Bickhard and Ford, then of necessity contains an element of self-efficacy. This theoretical position would contend that the person who feels potent or efficacious in social situations will concurrently possess a higher level of motivation to actively and positively participate in such situations.

In Adler's original conception of the social interest construct, he identified those persons who possessed a low level of social interest. These persons, as groups, would possess lower levels of self-esteem. For example, he states that "all failures--neurotics, psychotics, criminals, drunkards, problem children, suicides, perverts and prostitutes--are failures because they are lacking in social interest." (Ansbacher & Ansbacher, 1956, p. 156).

Another relevant theoretical perspective is advanced by Nystol (1976). He argues there are three different levels of

social interest: umwelt, mitwelt, and eigenwelt. He then contends that the person operating on the mitwelt level has altruistic goals and is therefore brought into intimate contact with key reference groups. This provides the person with the opportunity to see himself through his interaction with significant others which results in raised self-esteem. Nystol's conceptual model intrinsically relates social interest at the mitwelt level with self-efficacy. Indeed Crandall and Kytonen (1980) argue that social interest is a prerequisite for psychological adjustment and well-being. Crandall and Putnam (1980) maintain that social interest provides the individual with protection against extreme feelings of inferiority and defeat.

While neither the empirical studies or theoretical positions summarized above offer definitive proof that social interest and social self-efficacy comprise a unitary construct, they do support the hypothesis that the two constructs are intricately related and, in terms of mental health and positive social behavior, are functionally equivalent. Crandall (1978) offers a explanation which supports the plausibility of this hypothesis. He argues that valuing, i.e. to have an interest or to care about something, is the fundamental aspect of psychological functioning which integrates other dimensions. If social interest is construed as the valuing of others and self-efficacy as the valuing of oneself, then a common linkage is identified. It may

well be that value is the underlying dynamic resulting in this single factor of prosocial attitude.

Another factor derived from the data, social anxiety, was not directly hypothesized in the original model. However, as the factor is comprised of negatively worded self-efficacy items, it is the obverse of self-efficacy. A relationship between social anxiety and self-efficacy has been reported. Nichols (1974), for example, found that psychiatric patients characterized by severe social anxiety had low self-esteem. As such social anxiety represents a lack of confidence in oneself in social situations and the presence of discomfort in the presence of others. This discomfort is the distinguishing characteristic of social anxiety according to Buss (1980). As the factor analysis indicates this is a distinctive dimension from prosocial attitude which also contains elements of self-efficacy. Just as the prosocial attitude domain tapped the dynamic of social value, the social anxiety factor appears to clearly tap the dimension of felt potency. While one may value oneself and others, this valuing is no guarantee that one will perceive oneself as potent in a social situation or that one will not feel discomfort in social situations.

Another factor extracted in the solution was comprised of items related to affective sensitivity and expressiveness. It was labeled "emotionality." This factor was not hypothesized in the original model and unlike the prosocial attitude and social

anxiety factors does not represent a combination of originally hypothesized constructs, such as prosocial attitude does, or a variant of a component of the original model, such as social anxiety does. While obviously possessing some dimensions of empathy it did not load with the empathy skills factor. Instead it represents a new and additional component. Unlike the other four factors the emotionality factor seems to represent a personality pattern or, in Buss's (1980) terms, a temperament or innate personality disposition. This conclusion is reached based on the nature of the scale comprising the domain items and the fact that the Social Interest Scale, which is comprised of personality descriptors, loaded with this factor when it was included in the analysis. One facet of social inteligence therefore appears to be a full or rich affective life, as opposed to a truncated affective experience. The strength and importance of emotionality to social intelligence will be assessed later in a discussion of another research question. Whatever that relationship is, it is clear from this data that one distinctive domain of social intelligence is a personality pattern or temperament of emotionality.

These results have several implications for researchers and generate further areas to be explored. First the data strongly support a multidimensional model of social intelligence. Social intelligence clearly is not a unitary construct and should not be approached as if it were in research studies. Rather there

appear to be at least five distinct domains of social intelligence which while related are also empirically and conceptually distinguishable.

These are several points which need further study. First, for these conclusions to be more tenable, there should be replication studies with similar and differing populations. Only as these domains are consistently replicated can there be a high level of confidence that these domains do indeed comprise social intelligence. Second, the search for additional domains of social intelligence should continue. Third, there is the need to examine in greater detail, through additional studies, some of the unexpected outcomes of this study. For example, is prosocial attitude a coherent domain as this study indicates or is it comprised of other factors? Are there additional elements of social anxiety which should be incorporated in the model? These results also indicate that certain personality characteristics are associated with social intelligence. Further studies which examine the correlations between social intelligence measures and personality measures are needed to examine this possibility. Finally, further analyses, such as path and cluster analytic studies, are needed to determine the interactions and relationships among these components.

These results also have implications for practioners. Those persons who are concerned with the acquisition of social intelligence should also conceptualize social competence

multi-dimensionally. While they may choose to emphasize in their training and counseling activities one dimension of social intelligence, such as social skill or social anxiety, they should be aware of how this training could impact other dimensions. Hopefully social competence training programs in the future will place greater emphasis on attention to all dimensions of social intelligence. While this study does not address the question of causal chains or interactions among these components, it is probable that such interactions occur. For example, the therapist or trainer who is teaching his or her client a social skill is probably having some affect on that client's sense of self-efficacy. Until further studies clarify this process the practioner must continue to be sensitive to all the potential implications of his or her interventions.

Discussion of the Second Question

The second question this study addressed was the relationship of social intelligence to a measure of social performance, the Social Maturity Index. The results reported in Chapter 4 indicated that two of the social intelligence domains, prosocial interest and emotionality, were moderately related to the SMI, r = .25, .24, respectively. The regression analysis reported in this same chapter also indicated that it was only these two domains that were significantly related to social maturity. Furthermore, the amount of SMI variance accounted for by these two domains was minimal (9%).

Based on this data social intelligence does not appear to be strongly related to social maturity as measured in this study. There are several alternative explanations for this finding. The obvious one is that the ability to act appropriately and beneficially in social situations, because of the presence of the necessary skill and self-confidence factors, is not strongly related to actual social performance. However, while this alternative cannot be rejected on the basis of these data it should not be readily accepted either for several reasons. One of these reasons has to do with the nature of the criterion measure itself. The SMI is a self-report measure which is comprised of a regression equation which best predicts social performance. The recommended regression equation was developed with a sample of corrections inmates as the "lower" social maturity comparison group. Other samples might well lead to a different equation. As a further restriction the SMI, as a measure, does not directly sample social performance by questions such as "how active are you in community organizations?" Rather it measures attitudes and values which have been found to be related to social performance. Finally, the equation itself is not perfectly predictive of social maturity. Gough (1966) reports an accuracy percentage of 64%.

Given these limitations on the criterion instrument, cautious conclusions must be drawn. Social intelligence is not strongly related to the SMI. However, the relationship of social

intelligence to actual social performance has not yet been measured. Further studies should examine the relationship of social intelligence to actual measures of social performance such as community involvement, interpersonal relationship satisfaction, social contribution, etc.

Given these limitations, it is interesting that the significant predictors of social maturity were the prosocial interest and emotionality domains, rather than the skill domains. This finding leads to the hypothesis that one's self-confidence, level of interest, and personality dispositions are more determinative of one's social performance than is one's level of social skill. If this hypothesis were verified, it would have important implications for the practice of social skills training or other interventions aimed at prosocial behavior development. If this were the case, these interventions would need to attend more to social self-image rather than behavioral skill acquisition.

However, given the problems of the SMI as a criterion of effective social performance, such a conclusion is unwarranted at this point. While it is logical to hypothesize a strong linkage between social intelligence and social performance, that linkage has yet to be established.

Discussion of the Third Question

The third question of this study asked "what was the relationship of social intelligence and general or academic

intelligence?" The genesis of this question was the position of some researchers that social intelligence does not exist as a separate domain distinct from academic intelligence.

The data reported in Chapter 4 clearly reject this argument. In the reported factor analysis the social intelligence domains were distinguishable from the general intelligence domains. With one exception there were non-significant correlations between social intelligence and general intelligence. The magnitude of this one correlation was not particularly strong, $r = -.19$. Stronger evidence of the independence of social and general intelligence was provided by a partial correlation analysis. The removal of general intelligence did not change the relationship among the social intelligence domains. Their relationship, in other words, is not dependent on or accounted for by general intelligence. Finally, the addition of the general intelligence variable to the regression equation, while adding significantly to the variance in social maturity accounted for by the social intelligence measures, did not add substantial variance (4%). Also, whereas the general intelligence variables accounted for 4% of the variance in social maturity, the social intelligence variables accounted for 9%.

It is clear from these data that social intelligence and general intelligence are separate domains. Further studies however should utilize other measures of general intelligence and a full multi-trait multi-method design for this conclusion to be

confirmed more thoroughly. The relative contributions of general intelligence and social intelligence to social performance need further study given the restrictions of the instrument used to evaluate social performance in this study. Finally, the cluster analysis of demographic variables indicates that neither educational level or general intelligence is related to social intelligence. This is further evidence that social intelligence is a distinctive domain.

Discussion of the Fourth Question

The fourth question this study addressed was "how is gender identity related to social competence?" The results reported in chapter four indicate there is a definite pattern of relationship.

The categorical model of gender identity leads to the clearest finding of this study, which is that the undifferentiated person demonstrates a significantly lower level of social intelligence than do persons assigned to the other categories. This finding is consistent with conclusions of other studies in which undifferentiated persons were found to demonstrate lower levels of social competence (Bem, 1974; Puglisi & Jackson, 1980-81, Spence, Helmreich & Stapp, 1975). The findings of this study obversely support those theorists who argue that androgyny is equivalent to positive mental health. Whether one accepts or does not accept the position that androgyny is synonomous with mental health, it certainly appears

that the opposite of androgyny, undifferentiatedness, is strongly related to lower levels of social intelligence.

As stated earlier, a number of researchers have theorized that the androgynous person is more socially competent than masculine or feminine persons due to the fact that they possess both masculine and feminine traits and are therefore more adaptable to various social situations. The results of this study do not support this thesis. Androgynous persons were significantly superior to undifferentiated persons on the three self-image domains of social intelligence: prosocial attitude, social anxiety and emotionality. However, while mean scores of androgynous persons were higher (or lower in the case of social anxiety) than masculine or feminine persons this difference did not reach statistical significance. And in the skills domains no statistically significant difference was found. While androgyny is clearly related to social intelligence, the androgynous person is not superior in social intelligence to either the masculine or feminine person on any of the five dimensions of social intelligence measured in this study.

This conclusion is in line with the results of the balance model analysis and the recent research findings by Lubinski et al. (1981, 1983). Neither this study nor the Lubinski studies, using regression analysis and defining androgyny as an interactive term (M x F), found androgyny to account for any significant percentage of variance over that accounted for by

masculinity and femininity separately. The data of this study indicate that while masculinity and femininity are related to the self-image component of social intelligence, they are not related to the skills components. Furthermore, only masculinity and femininity are required to account for the variance in social intelligence. Further studies of the relationship of social intelligence and gender identity should incorporate the varying definitions and scoring formulas so that comparisions of correlation patterns and regression variances can be made.

Concluding Discussion

This study provides further information about several key aspects of social intelligence and raises additional issues for further study.

The first key finding of this study strongly supports the position that social intelligence is a multidimensional construct. The five domains identified in the study; prosocial interest, social skill, empathy skill, emotionality and social anxiety, were derived through an orthogonal factor analytic procedure which emphasizes their distinctiveness. Treatment programs or researchers who conceive of social intelligence as a single domain will fail to address the full scope of the construct. The implications of this finding for social skills trainers is that their intervention programs should be broadly based, emphasizing the range of social intelligence domains rather than a single domain. Or if a single domain is emphasized

for whatever reasons, the social skills trainer should at least be cognizant of other domains and how the current intervention may impact those domains. It is possible that the current emphasis on single domain intervention may be related to the problem of skill generalization. As Brown (1982) has summarized, social skills training emphasizing behavioral skills acquisition has yet to be found consistently generalizable. This lack of generalization may be due in part to a failure to emphasize change in the self-concept domains of social intelligence. Simply put, persons may possess skills but lack the confidence needed to use those skills. This hypothesis is supported by the data reported in this study which found that persons undifferentiated in gender identity, a category consistently found to be comparatively poorer in overall mental health, did not differ from other, more psychologically healthy categories, in the skills domains. While one cannot conclude from these data that self-concept is the key variable in the efficacy of generalizability training, the hypothesis is certainly raised by the data.

The second key finding of this study is that social intelligence is distinct from academic intelligence. For educators this has important implications for school curriculum. If the school is to continue to act as a socialization agent for society, it cannot be assumed that an emphasis on academic aptitude will result in the performance of socially acceptable

behavior. Just as academic intelligence must be cultivated by the school curriculum, so must social intelligence. While the current "back to basics" emphasis does not stress a social intelligence curriculum, there is little reason to expect the school to retreat from its role as socialization agent. Rather there needs to be a conscious emphasis on the development of social competence. The assumption that social intelligence will develop naturally to its fullest, without conscious modeling and an intentional curriculum, is potentially highly fallible.

A third key finding of this study is that social intelligence is positively related to an androgynous model of mental health. While there are several problems with the use of gender identity, in particular androgyny, as a measure of mental health, there is a clear relationship between the two variables. Given the continual and growing needs of our society for effective primary prevention mechanisms (Marlowe & Weinberg, 1983b), this relationship becomes very important. If social intelligence is linked to mental health and if social intelligence can be developed, then another potential buffer to mental illness has been developed.

A fourth key finding of this study is that social intelligence is not related to such basic demographic variables as adult age, sex, level of education or occupational level. This finding argues against the stereotyping of certain groups as socially sensitive or insensitive. It is also another indicator

that the educational system does not address social intelligence since neither level of education nor occupational level are related to social intelligence.

There are other areas that should be fruitful for study. For example, the deleterious effects of stress are clearly established. Interpersonal stressors are one particular source of stress. The potential moderating effect of social intelligence on the stress-health linkage should be explored. Another potential research area is the relationship between social intelligence and counseling effectiveness. Gardner (1983) has hypothesized that one characteristic of effective therapists is a high level of social intelligence. This hypothesis should be empirically investigated. A further area of potential study is the variances among differing populations on social intelligence. While this study did not find differences among the basic demographic categories, it was restricted to one major occupational class. It may be posible that various occupational groups differ in level of social intelligence. This possibility should be empirically examined.

Prior, however, to any of the above studies, further work needs to be done on instrumentation development. This study has resulted in the preliminary development of a battery to assess social intelligence. Test-retest reliabilities need to be calculated and an acceptable level reached. While there is good evidence that divergent validity exists with respect to other

forms of intellectual ability, it would be important to establish convergent validity of this potential instrument through correlational analysis with other measures of social intelligence.

While the study clarifies some issues, it also raised others. One of these issues has to do with the replicability of the study. Will the domains of social intelligence found in this study be found in studies of other populations? Would they replicate in a broader sample of the same population? Are there unidentified domains? Is the five domain model the most powerful and the most economic or is another model more suitable? Each of these questions needs to be addressed in further studies of the construct.

A related issue to the replication of the five domains identified in this study is the issue of whether or not other pertinent domains exist. Further factor analytic studies of this battery and other social intelligence measures are needed to further explore the multidimensionality of social intelligence.

While this study added to the growing literature that finds social intelligence distinct from general intelligence, its weight is limited due to the use of only two measures of general intelligence, both of a paper and pencil format. A definitive study of this question should use a complete multi-trait multi-method design. This study has yet to be done.

Another area needing further study is the relationship of social intelligence to effective social performance. The data presented in this study did not indicate a particularly strong relationship. However, there were measurement problems. Further studies of this question are needed which would utilize more direct measures of social performance which would compare populations contrasting dramatically in the level of social performance. In particular, studies are needed which examine the relationship of the domains to social effectiveness and psychological health. Such relationships, if established, will help establish construct validity.

In summary, this study indicates that social intelligence is a multi-dimensional construct that is distinct from general intelligence. While it appears to be related to psychological health, further studies are needed to determine its relationship to both psychological health and effective social performance.

APPENDIX 1
DEMOGRAPHIC QUESTIONNAIRE

The information you provide will be kept strictly confidential and will be used for research purposes only. Enter the data required below on the answer sheet and on this form where requested.

Item
Number

1. Sex 0= Male 1= Female

2. Race 0= White 1= Black 2= Hispanic 3= Asian 4= Other

3. Age 0= 20 or less 1= 21-25 2= 26-30 3= 31-35 4= 36-40
5= 41-45 6= 46-50 7= 51-55 8= 56-60 9= 61-65+

4. Grade or Education Level

0 = less than 7th grade
1 = up to junior high school (9th grade)
2 = partial high school (10th or 11th)
3 = high school graduate
4 = partial college (at least 1 year) or specialized training
5 = standard college or university graduation
6 = graduate professional training (graduate degree)

5. Occupational Code

0 = UTR Supervisor
1 = UTR Shift Supervisor
2 = UTR Specialist
3 = Psychiatric Nurse Specialist
4 = Licensed Practical Nurse
5 = Charge Aide
6 = Ward Supervisor
7 = Rehabilitation Therapist
8 = Other

6. Current Marital Status

0 = married/cohabiting
1 = single (single, divorced, widowed, separated)

APPENDIX 2
CONSENT FORM

The major purpose of this research is to obtain information on various relationships between measures of social behavior and other measures related to personal characteristics.

In accordance with the regulations of the Department of Health and Human Services and the Florida State University System, the researcher is required to obtain your "informed consent" as a participant in this research activity. This means that you understand the general purpose of the research in which you will participate and that you agree to provide information to the researcher with the following understanding:

1) The information will be used for research purposes only.

2) Your anonymity will be preserved.

3) The information you provide is freely given.

4) You have the right to discontinue participating at any time without penalty.

The University has filed an institutional assurance with the Department of Health and Human Services to assure the protection of human subjects, and a copy of the assurance will be made available upon request to the Division of Sponsored Research, University of South Florida.

I hereby agree to participate in this research.

_____

Signature of Participant

_____

Date

APPENDIX 3
SCORING ROUTINES

Shipley-Hartford (Abstract Subtest) (SHA). Participants were instructed to complete the items by supplying the appropriate number(s) or letter(s). This instrument was scored according to the scoring instructions contained in the manual of directions and scoring for the Shipley Hartford. Each of the twenty items was scored as correct if the response matched that of the scoring key. The total score was the number of correct responses multiplied by two. The total score was entered directly on the NCS answer sheet. The time limit was ten minutes.

Shipley-Hartford (Vocabulary Subtest) (SHV). This instrument required respondents to select the word which was most synonymous with the stimulus word. Following the prescribed instructions in the manual, participants received one point for every correct response made. The total score was arrived at by summing the total number of correct responses. One additional point for every four items not attempted (missing) was added to the total score unless there was more than one response made for an item. If all responses were missing, the total score was set to missing. The time limit was ten minutes.

Social Interest Index (SII). Respondents were instructed to indicate to what extent each of the SII statements were descriptive of themselves. A five-point scale was used for this purpose with "1" indicating "does not apply," "2" indicating "not much like me;" after each responses were augmented by one point since the initial range of possible responses were from 0 to 4. Responses outside the range of possible responses were considered missing.

Item responses were not summed to arrive at a total score due to the fact that the items themselves were to be factor analyzed to investigate the structure of the SII and to arrive at factor score composites.

Self-Efficacy Scale (Social Subscale) (SESS). The instructions for this instrument required that participants endorse a response that reflected how much a particular statement described them. Responses were to be made on a six-point scale with the lowest anchor corresponding to "completely unlike me" and the highest anchor to "exactly like me."

Responses outside the appropriate range were set to missing and each valid response was incremented by a value of one for reasons explained previously.

The scoring of items one, three, and five was revised (e.g., 1=6, 6=1) since they were negatively worded, that is, a response indicating that the statement was "exactly like me" would reflect

law social self-efficacy. Missing responses were corrected following the procedure described earlier.

Perceived Decoding Ability Scale 2 (PDA2). This 16-item scale was a shorter version of the original scale. Respondents indicated the degree to which they agreed with each item using a seven-point scale. This inital range for the responses was from 0 to 6. Responses greater than six were set to missing and the value of "3" was subtracted from each valid response so that the transformed response range was from -3 to +3 with a neutral point of 0. The response anchor corresponding to -3 was "strongly disagree," the anchor for +3 was "strongly agree," and the 0 point was "neither agree nor disagree." Items 3, 8, and 13 were negatively phrased so the values for these responses were reversed. Missing items were corrected according to the procedure described previously. Again no total score was computed.

Skill Survey--Peer (SSSP). This was an abbreviated version of the original scale. On this instrument respondents were to endorse a response which corresponded to the degree to which they possessed particular social skill. A five-point scale was used with the lowest extreme of possible responses being "do not possess the skill," and the highest being "possess a very high level of the skill." Nonmissing responses outside the appropriate response range were set to missing. Missing data was

corrected as before. A total score was not computed by summing responses for reasons explained earlier.

Demographic Questionnaire. This questionnaire contained six items and requested the following information:

1. Sex (males were coded as 0 and females as 1).
2. Race (whites were coded as 0 and others as 1).
3. Age (there are ten age categories with those "twenty years or less" coded as 0 and those "61-65 years or older" coded as 9).
4. Grade or Education Level (there were 7 categories for grade level with "less than seventh grade" coded as 0, and "graduate professional training" coded as 6).
5. Occupational Code (this item had 9 possible responses. "UTR" supervisors" were coded as 0 and "other" as 8).
6. Current Marital Status (this referred to whether the person was married or not; "married/cohabiting" was coded as 0 and "single" as 1).

Responses outside the appropriate range were transformed to missing. For example, if a respondent enterd a "2" for sex, then that response ws set to missing. Any response beyond the prescribed range for the following items was therefore set to missing: sex, race, grade level, occupational code, and marital staus. Additionally, for the race item, the categories were revised so that 0= nonminority, and 1, 2, 3, and 4= minority.

Perceived Encoding Ability Scale 2 (PEA2). The PEA scale was formatted and scored in the same nammer as the PDA scale. PEA items 5,9,10, and 13 were reversed because they were negatively worded.

Interpersonal Reactivity Index (IRI). On this scale respondents were asked to indicate the degree to which each statement or situation was descriptive of themselves. A 5-point scale was used for this purpose with the lower end of the scale representing "does not describe me well" and the higher end representing "describes me well".

Responses beyond the acceptable range of responses were considered missing and each valid response was incremented by a value of one, so that the range was from one to five. Items 2, 3, 7, 8, and 9 were reversed so that they could be interpreted in a positive sense. The scale developer suggested that there were two subscales of the IRI scale, the empathic concern and perspective-taking subscales. However, these subscales were not utilized in the factor analysis procedure which was planned. Instead all 14 items of the total scale were to be analyzed.

Texas Social Behavior Inventory (Form A) (TSBI). Participants were presented with 16 self-descriptive statements to which they were to indicate the degree the statements were characteristic of themselves. The response categories ranged from "not at all characteristic of me" to "very characteristic of me." The inventory employed a 5-point scale. Responses outside possible range were considered missing and a value of one was added to each valid response. The following items were reversed: 1, 5, 6, 12, 13, and 15. Again, no total score was computed.

Social Interest Scale (SIS). Participants were presented with 24 pairs of words and were instructed to choose the one word of each pair which they valued more highly. For example, item 1 asked whether the person would rather be imaginative or rational. A response was scored as correct if it corresponded to the keyed response for that item. Keyed items indicated social concern or interest (e.g., helpful versus quick witted). A number of items were fillers and were not scored (i.e., items 1, 4, 6, 8, 10, 13, 16, 17, and 24). A response was entered as a 0 if a participant selected the first word of the pair, and 1 if the second word was selected. Responses greater than 1 were put to missing and missing data were corrected by substituting a value of 0 if the mean for available data on the remaining keyed items which were nonmissing were less than .5 or by substituting a value of 1 if the mean was greater than or equal to .5. This was done only if at least 75% of the data were nonmissing for the keyed items. A response of 0 which was also the correct keyed response was transposed to 1 much like the procedure for dealing with negatively phrased items.

Bem Sex Role Inventory (BSRI). The instructions for this inventory required the respondent to indicate on a 7-point scale the degree to which 30 adjectives or phrases were characteristic of him/her. The lowest extreme of the scale is described by "never or almost never true" of the respondent while the highest

extreme is described by "always or almost always true." The inventory was comprised of two subscales, of 10 items each. The masculinity subscale consisted of items 1, 3, 5, 9, 11, 14, 16, 20, 24, and 26 and the femininity subscale of items 7, 13, 15, 18, 19, 21, 23, 25, 28, and 30; each subscale was derived by the scale developer. The remaining 10 items were randomly selected fillers which were not included in the scoring routine.

Extraneous responses were considered missing and a value of one added to each valid response. Missing data was corrected for each subscale separately, but in this case since total subscale scores were arrived at by summing the appropriate responses, the total scores were adjusted. This was accomplished by multiplying the sum of the available subscale items by a factor of 10 and dividing this product by the number of nonmissing responses for that subscale. This procedure has the same effect as replacing missing responses with the mean of the available responses on that subscale. A total subscale score was set to missing unless at least 75% of the responses on that subscale were nonmissing (i.e. 75% of the total number of subscale items rounded to the next whole integer).

A procedure suggested by the scale author was used to classify respondents into one of four categories: masculine, feminine, androgynous, or undifferentiated based upon median splits of the two subscales.

Social Maturity Index (SMI). The SMI was derived by the scale developer from California Personality Inventory (CPI) items. Respondents were instructed to mark either "true" (1) if they believed that a particular statement was true about them or if they agreed with it, or, conversely to mark "false" (2) if they did not agree with it or it was untrue about them.

Responses were scored as correct if they agreed with the scoring key presented in the packet of CPI scoring stencils. There were three subscales in the index: Responsibily (items 4, 5, 6, 7, 8, 11, 14, 17, 18, 20, 24, 25, 26, 29, 34, 36, 38, 41, 42, 44, 45, 52, 53, 58, 67, 68, 70, 74, 75, 79, 82, 85, 86, 90, 91, 123, 124, 125, 126, 127, 130 and 131. Good Impression (items 1, 3, 9, 10, 12, 13, 15, 16, 19, 22, 23, 27, 28, 30, 33, 35, 37, 41, 43, 46, 48, 49, 51, 54, 56, 57, 63, 65, 66, 71, 73, 76, 78, 83, 84, 88, 89, 128 and 129), and Socialization (items 2, 11, 21, 31, 32, 39, 47, 50, 53, 55, 56, 59, 60, 61, 62, 64, 67, 69, 72, 77, 81, 87, 92, 93, 94, 95, 96, 98-122, 133, 134). Some items were scored for more than one subscale and some items were omitted entirely.

Responses greater than "2" were set to missing. To aid in scoring, the value of one (1) was subtracted from each valid response, resulting in a value of either "0" or "1". Therefore, a response of "true" was now indicated by "0" and a response of "false" by "1". Responses for items keyed as "correct" if "true"

was marked were transformed by subtracting the value of the response from 1. This had the effect of setting the value of the response to 1 if a respondent had marked "true", or to 0 if "false" was marked. In this manner, a respondent received a 1 for every "correct" response and a total subscale score could by computed by summing the number of correct responses. The items that were keyed as "true" were 3, 5, 7, 18, 20, 21, 39, 40, 41, 43, 44, 46, 47, 52, 54, 55, 58, 59, 62, 63, 64, 67, 68, 70, 71, 72, 74, 75, 77, 85, 86, 87, 93, 94, 96, 100, 102, 105, 107, 108, 112, 116, 120, 124, 128 and 130.

Total subscale scores were computed by summing the appropriate responses for each subscale (i.e., the number of correct responses.) These total scores were corrected for missing responses utilizing the same method descibed for the BSRI. An overall "predicted" score for the SMI was then derived by the following equation as advocated by the scale developers; predicted SMI Total Score = 25.701 + .408 x Total Responsibility Score + .478 x Total Socialization Score - .296 x Total Good Impression Score.

APPENDIX 4
MEANS, STANDARD DEVIATIONS AND T-TESTS OF SOCIAL INTELLIGENCE MEASURES FOR VARIOUS SAMPLES BY SEX

Table 28

Social Intelligence Measures: Male Means and Standard Deviations Compared to Other Samples

Scale	Current Sample			Comparison Sample				t*	p
	N	M	s.d.	Source	N	M	s.d.		
Social Interest Index	23	133.41	14.22	Kaplan, 1978	131	123.11	14.00	3.22	<.01*
Social Interest Scale	23	9.43	2.90	Crandall, 1975	111	8.00	3.83	2.01	<.05*
Texas Social Behavior	23	60.76	8.30	Helmreich, Stapp, 1974	248	56.45	8.87	2.34	<.05*
Social Self-Efficacy	23	24.21	4.38	Marlowe, et al. 1983	32	24.31	3.95	.09	N.S.*
Perceived Decoding Ability	23	17.44	10.64	Zuckerman, Larrance, 1979	189	18.44	9.25	.45	N.S.*
Interpersonal Reactivity - Empathetic	23	28.58	4.65	Davis, 1983		DNR***			
Interpersonal Reactivity - Perspective	23	28.89	4.42	Davis, 1983		DNR***			
Social Skills Survey	23	58.86	9.19	Marlowe, et al. 1983	65	59.13	19.88	.33	N.S.**
Perceived Encoding Ability	23	14.67	10.71	Zuckerman, Larrance, 1979	189	8.50	11.01	2.60	<.01*

* Based on pooled variance formula (Downie & Heath, 1965)

** Based on separate variance formula (Popham, 1967)

*** DNR - Did Not Report

Table 29

Social Intelligence Measures: Female Means and Standard Deviations Compared to Other Samples

Scale	Current Sample N	M	s.d.	Comparison Sample Source	N	M	s.d.	t*	p
Social Interest Index	149	136.35	12.35	Kaplan, 1978	159	128.29	12.80	5.60	<.01*
Social Interest Scale	149	9.61	2.97	Crandall, 1975	102	8.91	3.21	1.79	N.S.*
Texas Social Behavior	149	59.30	8.37	Helmreich, Stapp, 1974	282	56.64	9.02	3.05	<.01
Social Self-Efficacy	149	23.57	6.02	Marlowe, et al. 1983	60	23.9	3.03	.53	N.S.**
Perceived Decoding Ability	149	15.85	11.71	Zuckerman, Larrance, 1979	196	22.30	9.87	5.42	<.001*
Interpersonal Reactivity - Empathetic	149	29.58	4.61	Davis, 1983		DNR***			
Interpersonal Reactivity - Perspective	149	28.04	4.42	Davis, 1983		DNR***			
Social Skills Survey	149	58.53	8.58	Marlowe, et al. 1983	116	58.61	20.07	.54	N.S.**
Perceived Encoding Ability	149	12.18	11.44	Zuckerman, Larrance, 1979	196	16.24	11.54	3.27	<.01*

* Based on pooled variance formula (Downie & Heath, 1965)

** Based on separate variance formula (Popham, 1967)

*** DNR - Did Not Report

APPENDIX 5
FIRST ORDER FACTOR ANALYSIS OF INDEPENDENT VARIABLES

This appendix reports on the results of the factor analyses of the measures used to address the first research question of the study: What is the domain structure of social intelligence? The measures, representing different potential domains of social intelligence, were the Social Interest Index, The Social Interest Scale, The Texas Social Behavior Inventory, The Social Self-Esteem Scale, the Interpersonal Reaction Index, the Perceived Decoding Ability Scale, the Perceived Ability Encoding Scale and the Social Skills Survey-Peer.

Factor analyses were conducted on each of these scales using principal axis factoring with iteration (PA2) according to SPSSX procedures. This procedure was selected since it is the most widely utilized factoring method and is the recommended procedure for persons with limited experience in factor analysis (Kim, 1975, p. 450). Complete data for the analysis was available on 185 cases. Several criteria were used in determining the final factor solution to be selected. As the first step further analyses after the initial extraction was restricted to those factors with an eigenvalue of 1.00 or above. With this

restriction scree test distribution patterns were reviewed along with the item pattern of one-factor to multiple-factor (as determined by the 1.00 eigenvalue cutoff) solutions. This resulted in most cases in the retention of one through five factor solutions. Each of these solutions was then examined for singlets, doublets and strong splits, as well as interpretability. On the basis of this examination a final factor solution was selected. The last criteria for final solution selected was to accept the most factorially discrete and interpretable solution so that factors of maximum discreteness would be available for the second order analysis.

Social Interest Scale

Comrey (1978) argues for the importance of using measures in a factor analysis that have adequate continuous distributions because without good continuous measures, the input correlation matrix will be a "poor" one. He asserts that "all too often, there is an attempt made to factor analyze poor data variables such as two-choice questionnaire items with poor splits in the proportion of yes and no responses" (Comrey, 1978, p. 650).

Accordingly, the variables should be relatively continuous. They should have several response categories, be somewhat normally distributed, and every pair of such variables should be linearly related. However, when there are only two response categories, the linearity assumption cannot be investigated.

Additionally, the correlation matrix will be severely distorted which in turn affects factor solution. For example, if the split on one dichotomous variable is 50-50 while a second is split 95-5, the correlation between the two variables is limited to an absolute value of about .23. It is also possible for distortions to occur due to overinflated correlations between variables. For example, if in a sample of 200 cases, 199 individuals responded no to two items and one individual answered yes to both, the correlation would be 1.00 between the two variables. With continuous variables, neither of these problems would be likely to arise.

Therefore, Comrey recommends that if dichotomous variables must be used, they should be as close to a 50-50 split if possible and even then the results should be interpreted cautiously. In order to examine the feasibility of using the SIS, a frequency analysis of each item was performed. This analysis revealed that relatively few items had close to a 50-50 split. For that matter, the majority (87%) of items had worse than a 67-33 split. As a result of this finding, the decision was made not to factor analyze the SIS and not to subsequently include this scale in the second order factor analysis due to the distortion which would be present. Moreover, in preliminary factor analyses incorporating the SIS factor scores and those from the other instruments, the SIS factor score(s) tended not to load significantly with any of the second order factors.

Factor Analysis of the Social Interest Index (SII)

Initial analysis of the SII yielded an eleven factor solution with multiple doublets, singlets and splits. A five factor solution was then forced to determine the item pattern. This solution also was characterized by multiple splits and thereby rejected. One through four factor solutions were then developed. The four factor solution was also characterized by numerous splits and was therefore rejected. Of the one, two and three factor solutions, the three factor solution was accepted on the basis of ease of interpretability. The three factor solution selected as the optimal solution accounts for 23% of the variance in the instrument as shown in Table 30. As Table 30 illustrates, the first factor consists of those items related to placing high value on social relationships. This factor, SII Factor 1, may be most appropriately labeled a social value factor. SII Factor 2, as shown in Table 30, consists of items related to social self-esteem. Finally, the third factor consists of those items which are related to perseverance and achievement in social relationships. As recommended by Comrey (1978), the unrotated factor matrix for the three factor solution is reported in Table 31.

Factor Analysis of the Texas Social Behavior Inventory (TSBI)

The initial principal axis extraction for the TSBI yielded five factors with an N of 185 cases. Accordingly, one through

Table 30

Social Interest Index: Rotated Factor Matrix (Loadings < .30 not reported)

Original Item Number	Item Statement	Factor 1	Factor 2	Factor 3
23	I feel family decisions need to be made jointly	.59		
21	I view marriage favorably	.58		
10	Once I decide something, I find a way to do it	.58		.38
24	As far as I am concerned, marriage is for life	.50		
20	I feel a man and a woman have equally important roles in a marriage	.50		
8	I feel rules are necessary	.43		

Table 30 - continued

Original Item Number	Item Statement	Factor 1	Factor 2	Factor 3
25	I believe liking your work is more important than the salary	.40		
13	I seldom feel the need to make excuses for my behavior	.33		
2	I am usually nominated for things at work or school		.54	
3	I usually like people I have just met		.50	
1	I have many friends		.42	
14	I feel I have a place in the world	.33	.42	
16	I seldom feel limited in my abilities		.40	
4	My friends are very important to me		.38	

Table 30 - continued

Original Item Number	Item Statement	Factor 1	Factor 2	Factor 3
5	I enjoy being in clubs		.37	
11	My plans generally turn out the way I want them to	.30	.33	
30	I am considered a hard worker			.47
15	I do my best most of the time			.46
29	Finishing a job is a real challenge to me			.43
26	I feel jobs are important because they make you take an active part in the community			.41
22	I have warm relationships with some people		.34	.40

Table 30 - continued

Original Item Number	Item Statement	Factor 1	Factor 2	Factor 3
32	I wonder if I will be able to do all I want in my lifetime			.39
27	School to me is more than just facts from books			.38
19	I believe a man and a woman can be both lovers and friends			.35
28	I prefer doing things with other people			.34
7	I am often turned to for advice			.31

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	4.644	14.5	14.5
2	1.638	5.1	19.6
3	1.077	3.4	23.0

Table 31

Social Interest Index: Unrotated Factor Matrix For Three Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1	Factor 2	Factor 3
10	.54		-.32
14	.53		
11	.51		
21	.48	-.43	.30
22	.48		
27	.47		
26	.47		
13	.46		
23	.43	-.38	
2	.43		.30
8	.41		
1	.40		
3	.39		
16	.39		
12	.37		
7	.37		
29	.36		

Table 31 - continued

Original Item Number	Factor 1	Factor 2	Factor 3
6	.36		
32	.36		
15	.35		
9	.35		
25			
18			
4			
5			
17			
24		-.45	
20	.32	-.39	
28			.38
30			.34
19			
31			

four factor solutions were also then extracted for the purposes of comparison and selection. The three, four and five factor solutions were rejected on the basis of multiple splits, singlets and doublets. Of the remaining factor matrices, the two factor solution was selected on the basis of clarity of interpretability.

As shown in Table 32, these two factors accounted for 25.6% of the total TSBI variances. Factor 1 is comprised of those items related to social self-confidence. Factor 2 items describe a pattern of social passivity. Table 33 reports the unrotated factor matrix.

Factor Analysis of the Social Self-Efficacy Scale (SSES)

The initial factor extraction of the six item SESS yielded a three factor solution on an N of 187 cases. Accordingly, one and two factor solutions were calculated. The three factor solution was rejected due to the existence of multiple splits, singlets and doublets. The two factor solution, reported in Table 34, was selected over the one factor solution since it could be more easily interpreted and it accounted for greater variance than the one factor solution. This two factor solution accounted for 33.2% of the variance of the total scale. The three items loading on Factor 1 refer to capabilities and perseverance in meeting people and making friends. The two items loading on Factor 2 refer to social difficulty. Table 35 reports the unroatated factor matrix.

Table 32

Texas Social Behavior Inventory: Factor Analysis Matrix (Loadings < .30 not reported)

Original Item Number	Item Statement	Factor 1	Factor 2
2	I would describe myself as self-confident	.69	
3	I feel confident of my appearance	.64	
4	I am a good mixer	.52	
10	I enjoy social gatherings just to be with people	.51	
9	Other people look up to me	.43	
14	I feel comfortable being approached by someone in a position of authority	.42	

Table 32 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
8	I would describe myself as one who attempts to master situations	.41	
16	I have no doubts about my social competence	.40	
7	When I disagree with other people my opinion usually prevails	.39	
5	When in a group of people I have trouble thinking of the right things to say		.56
13	I would rather not have very much responsibility for other people		.51

Table 32 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
15	I would describe myself as indecisive		.50
6	When in a group of people I usually do what the others want rather than make suggestions		.50
12	I cannot seem to get others to notice me		.43
1	I am not likely to speak to people until they speak to me		.43

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	2.85	17.8	17.8
2	1.25	7.8	25.6

Table 33

Texas Social Behavior Inventory: Unrotated Factor Matrix For Two Factor Solution

Original Item Number	Factor 1	Factor 2
2	.67	
3	.63	
4	.56	
10	.49	
5	.48	.36
14	.43	
12	.43	
9	.39	
16	.38	
8	.33	
11		
7		-.47
6		.42
15	.34	.38
13	.37	.37
1		.34

Table 34

Social Self-Efficacy Scale: Rotated Factor Matrix

Original Item Number	Item Statement	Factor 1	Factor 2
4	When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily	.67	
2	If I see someone I would like to meet I go to that person instead of waiting for him/her to come to me	.62	
6	I have acquired my friends through my personal abilities to make friends	.36	
5	I do not handle myself well at social gatherings		.64

Table 34 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
1	It is difficult for me to make new friends		.62

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	1.38	23.1	23.1
2	.61	10.2	33.2

Table 35

Social Self-Efficacy Scale: Unrotated Factor Matrix For Two Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1	Factor 2
2	.60	
4	.53	-.41
1	.53	.37
3	.37	
6	.36	
5	.43	.48

Factor Analysis of the Interpersonal Reactivity Index (IRI)

The initial factor extraction of the IRI yielded a five factor solution based on an N of 182 cases. Accordingly one through four factor solutions were also computed. Solutions comprised of three, four and five factors were rejected because of their multiple splits and doublets. The two factor solution was selected over the one factor solution because of ease of interpretability and the greater variance. As Table 36 indicates, all fourteen items loaded on one of the two factors. Also, as indicated in Table 36, these two factors accounted for 25.5% of the total variance. Table 37 reports the results of the unrotated factor matrix.

Factor Analysis of the Perceived Decoding Ability Scale 2 (PDA2)

The initial factor extraction of the PDA2 yielded four factors with eigenvalues greater than 1.0. One through three factor solutions were then computed and all four solutions compared. On the basis of numerous splits, the four factor solution was rejected. The three factor solution was accepted as both interpretable and meeting the criteria of first-order factor maximization. As Table 38 indicates, items loading on Factor 1 indicate skill at affective empathy. Items loading on Factor 2 indicate skill at cognitive empathy. Items loading on Factor 3 indicate poor empathy skills. Table 39 reports the results of the unrotated factor matrix.

Table 36

Interpersonal Reactivity Index: Rotated Factor Matrix, Two Factor Solution (Loadings < .30 not reported)

Original Item Number	Item Statement	Factor 1	Factor 2
13	When I'm upset at someone, I usually try to imagine how I would feel if I were in their place	.61	
10	I am often touched by things that I see happen	.61	
14	Before criticizing somebody, I try to imagine how I would feel if I were in their place	.61	
11	I believe that there are two sides to every question and try to look at them both	.51	

Table 36 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
12	I would describe myself as a pretty soft-hearted person	.47	
1	I often have tender, concerned feelings for people less fortunate than me	.46	
6	I sometimes try to understand my friends better by imagining how things look from their perspective	.40	
5	When I see someone being taken advantage of, I feel kind of protective towards them	.37	

Table 36 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
4	I try to look at everybody's side of a disagreement before I make a decision	.36	
3	Sometimes I don't feel very sorry for other people who are having problems		.58
9	When I see someone being treated unfairly, I sometimes don't have very much pity for them		.50
2	I sometimes find it difficult to see things from the "other guy's" point of view		.48

Table 36 - continued

Original Item Number	Item Statement	Factor 1	Factor 2
8	If I'm sure I'm right about something, I don't waste much time listening to other people's arguments		.42
7	Other people's misfortunes do not usually disturb me a great deal		.36

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	2.62	18.7	18.7
2	.96	6.8	25.5

Table 37

Interpersonal Reactivity Index: Unrotated Factor Matrix, Two Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1 Loadings	Factor 2 Loadings
14	.63	
13	.57	
10	.57	
11	.11	
6	.46	
12	.46	
5	.45	
1	.43	
4	.36	
7	.30	
3	.30	.54
2		.43
9	.31	.38
8		.33

Table 38

Perceived Decoding Ability Scale: Rotated Factor Matrix, Three Factor Solution (Loadings < .30 not reported)

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
15	I can usually tell when someone feels hostile from the person's tone of voice	.82		
16	I can usually tell when someone is angry from his or her facial expression	.77		
14	I usually can tell when someone is surprised from his or her facial expression	.66		
5	When someone tries to please me, I can usually tell from his or her tone of voice	.65		

Table 38 - continued

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
4	I can usually tell when a person approves of something from his or her facial expression	.63		
6	When someone feels grateful, I can usually tell from his or her facial expression	.63		
2	I can usually tell when someone feels afraid from the person's facial expression	.54		
7	I usually try very hard to understand how others feel	.44		

Table 38 - continued

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
1	I can usually tell when someone feels guilty from his or her tone of voice	.42	.32	
11	I can often tell what a person is going to say before he or she says it		.67	
12	When someone is lying, I can usually tell from his or her facial expression	.32	.63	
10	I think I have a lot of insight into people	.34	.54	

Table 38 - continued

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
3	When someone feels confident, I usually cannot tell from his or her tone of voice			.53
8	I am often slow to realize if people don't really want me around			.39
13	I usually cannot tell when a person is nervous from the person's facial expression			.34

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	4.75	29.7	29.7
2	.85	5.3	35.0
3	.69	4.3	39.3

Table 39

Perceived Decoding Ability Scale: Unrotated Factor Matrix, Three Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1	Factor 2	Factor 3
15	.80		
16	.79		
5	.68		
6	.65		
4	.64		
14	.62		
2	.59		
12	.57	-.41	
10	.56		
7	.53		
1	.53		
11	.42	-.54	
3			.53
8			
13			

Factor Analysis of the Social Skills Survey - Peer (SSSP)

The initial factor extraction of the SSSP yielded a three factor solution. This was compared with one and two factor solutions for final selection. The three factor solution was accepted as the solution most adequately meeting the factor criteria. The items on the first factor relate to the expression of positive social statements. Factor 2 items reflect the expression of negative or difficult social statements. Factor 3 items all relate to everyday conversational skills. As shown in Table 40 this factor accounted for 50.2% of the variance of the original scale. Table 41 reports the unrotated matrix.

Factor Analysis of the Perceived Encoding Ability 2 (PEA2) Scale

The initial factor extraction for the PEA2 yielded six factors with eigenvalues of 1.00 or above. Accordingly, one through five factor solutions were then computed. Comparison of the six factor solutions led to rejection of all multiple factor solutions because of singlets, doublets or splits. Table 42 lists the items loading on the single factor. As an examination of the items will indicate, the items refer to interpersonal openness regarding personal affective states. Table 43 reports the unrotated matrix.

Table 40

Social Skills Survey - Peer: Rotated Factor Matrix, Three Factor Solution (Loadings < .30 not reported)

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
15	Responding to the feelings of others	.65		
6	Expressing appreciation	.61		
8	Asking for help	.61		
7	Expressing encouragement	.59		
4	Listening	.59		.36
5	Expressing a compliment	.57		
9	Giving instructions	.53	.39	
10	Expressing affection	.52	.34	
14	Responding to praise	.47	.36	

Table 40 - continued

Original Item Number	Item Content	Factor 1	Factor 2	Factor 3
11	Expressing a complaint		.74	
13	Expressing anger		.66	
12	Persuading others		.49	
2	Carrying on a conversation			.80
1	Starting a conversation	.31		.65
3	Ending a conversation	.39		.58

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	6.17	41.1	41.1
2	.71	4.8	45.9
3	.65	4.3	50.2

Table 41

Social Skills Survey - Peer: Unrotated Factor Matrix, Three Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1	Factor 2	Factor 3
2	.71		
3	.71		-.50
9	.70		
5	.68		
1	.66		-.36
11	.66		
15	.65	.47	
6	.65		
7	.63		
8	.63		
10	.62		
4	.61	-.31	
14	.60		
13	.55	.38	
12	.53		

Table 42

Perceived Encoding Ability Scale: Rotated Factor Matrix, Two Factor Solution (Loadings < .30 not reported)

Original Item Number	Item Content	Factor 1	Factor 2
7	When I want to please someone, people can usually tell from my tone of voice	.70	
4	People can usually tell when I am afraid from my facial expression	.57	
6	People can usually tell when I approve of something from my facial expression	.55	
8	When I am grateful, people can usually tell from my facial expression	.53	
3	People can usually tell when I feel guilty from my facial expression	.47	
11	Often when I try not to let on how I feel, people seem to catch on anyway	.43	

Table 42 - continued

Original Item Number	Item Content	Factor 1	Factor 2
12	When I tell a lie, people usually know it from my tone of voice	.37	
14	I cry easily in sad movies	.34	
16	When I am surprised, people can usually tell from my facial expression	.32	
1	People can usually tell when I feel hostile from my tone of voice		.83
2	People can usually tell when I feel hostile from my facial expressions		.74

Summary Statistics

Factor	Eigenvalue	% of Variance	Cummulative Variance
1	2.90	18.1	18.1
2	.97	6.1	24.2

Table 43

Perceived Encoding Ability Scale: Unrotated Factor Matrix, Two Factor Solution (Loadings < .30 not reported)

Original Item Number	Factor 1 Loadings	Factor 2 Loadings
2	.70	-.45
7	.64	
4	.54	
3	.52	
6	.49	
22	.44	
8	.43	.32
16	.40	
12	.37	
14		
9		
13		
1	.60	-.62
15		
5		
10		

APPENDIX 6
CRONBACH ALPHA RELIABILITIES OF FIRST- AND SECOND-ORDER FACTORS

Table 44

Cronbach Alpha Reliabilities of First- and Second-Order Factors

First Order Factors		
Scale	Factor	Reliability
Social Skills Survey	1	.87
	2	.74
	3	.83
Social Self-Efficacy Scale	1	.58
	2	.57
Perceived Encoding Ability	1	.73
	2	.74
Texas Social Behavior Inventory	1	.74
	2	.67
Perceived Decoding Ability	1	.87
	2	.70
Interpersonal Reactivity	1	.76
	2	.61
Social Interest Index	1	.72
	2	.67
	3	.55
Second Order Factors	1	.85
	2	.91
	3	.88
	4	.79
	5	.69

REFERENCES

Adler, A. (1956). The individual psychology of Alfred Adler: A systematic presentation in selections from his writings (H. L. & R. R. Ansbacher, Eds.). New York: Basic Books.

Adler, A. (1973). Superiority and social interest: A collection of later writings (H. L. & R. R. Ansbacher, Eds.). New York: Viking Press.

Adler, P. T. (1982). An analysis of the concept of competence in individuals and social systems. Journal of Community Mental Health, 18, 34-45.

Alpert, J. L., & Rosenfield, S. (1981). Consultation and the introduction of social problem-solving groups in schools. Personnel and Guidance Journal, 60, 37-41.

Anderson, S., & Messick, J. (1974). Social competency in young children. Developmental Psychology, 10, 282-292.

Ansbacher, H. L., & Ansbacher, R. R. (Eds.). (1956). The individual psychology of Alfred Adler. New York: Harper & Row.

Antill, J. K., & Cunningham, J. D. (1979). Self-esteem as a function of masculinity in both sexes. Journal of Consulting and Clinical Psychology, 47, 783-785.

Argyle, M. (1981). The contribution of social interaction research to skills training. In J. D. Wine & M. D. Smye (Eds.), Social competence (pp. 261-286). New York: Guilford.

Arkowitz, H., Lichtenstein, E., McGovern, K., & Hines, P. (1975). The behavioral assessment of social competence in males. Behavior Therapy, 6, 3-13.

Ary, D., Jacobs, L. C., & Razzviegh, A. (1979). Introduction to research in education (2nd ed.). New York: Holt, Rinehart and Winston.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.

Bandura, A., Adams, N. E., Hardy, A. B., & Howell, G. N. (1980). Tests of the generality of self-efficacy theory. Cognitive Therapy and Research, 4, 39-66.

Bem, S. L. (1974). The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 42, 155-162.

Bem, S. L. (1977). On the utility of alternative procedures for assessing psychological androgyny. Journal of Consulting and Clinical Psychology, 45, 196-205.

Bem, S. L. (1978). The Bem Sex-Role Inventory. Palo Alto, CA: Consulting Psychologists Press.

Bem, S. L., Martyna, W., & Watson, C. (1976). Sex typing and androgyny: Further exploration of the expressive domain. Journal of Personality and Social Psychology, 34, 1016-1024.

Berndt, T. J. (1981). Relations between social cognition, non-social cognition and social behavior: The case of friendship. In J. H. Flavell & L. Ross (Eds.), Social cognitive development (pp.190-213). New York: Cambridge University Press.

Berzins, J. I., Welling, M. A., & Wetter, R. E. (1978). A new measure of psychological androgyny based on the Personality Research Form. Journal of Consulting and Clinical Psychology, 46, 126-138.

Bickhard, M. H. & Ford, B. C. (1976). Adler's concept of social interest: A critical explanation. Journal of Individual Psychology, 32, 27-49.

Bloom, B. L. (1977). Community mental health. Monterey, CA: Brooks/Cole Publishing Co.

Brennan, T. (in press). Loneliness at adolescence. In L. A. Peplau & D. Perlman (Eds.), Loneliness: A sourcebook of current theory, research and therapy. New York: Wiley-Interscience.

Brown, M. (1982). Maintenance and generalization issues in skills training with chronic schizophrenics. In J. P. Curran & P. M. Monti (Eds.), Social skills training (pp. 90-116). New York: Guilford.

Brown, S. D., & Brown, L. W. (1980). Trends in assertion training research and practice: A content analysis of the published literature. Journal of Clinical Psychology, 36, 265-269.

Bryant, B., & Trower, P. E. (1974). Social difficulty in a student sample. British Journal of Educational Psychology, 44, 13-21.

Bryant, B., Trower, P. E., Yardley, K., Urbieta, H., & Letemendia, F. (1976). A survey of social inadequacy among psychiatric outpatients. Psychiatric Medicine, 6, 101-112.

Bryant, F. B., & Veroff, J. (1982). The structure of psychological well-being: A sociohistorical analysis. Journal of Personality and Social Psychology, 43, 653-673.

Bulman, R. J. & Wortman, C. B. (1977). Attributions of blame and coping in the "real world": Severe accident victims react to their lot. Journal of Personality and Social Psychology, 35, 351-363.

Buss, A. H. (1980). Self-consciousness and social anxiety. San Francisco, CA: W. H. Freeman & Co.

Campbell, D. T., & Fiske, P.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 56, 81-105.

Campbell, J. P., & Pritchard, R. D. (1976). Motivation theory in industrial and organizational psychology. In M. D. Dunnette (Ed.), Handbook of industrial and organizational psychology (pp. 15-27). Chicago: Rand McNally.

Campbell, M., Steffen, J. J., & Langmeyer, D. (1981). Psychological androgyny and social competence. Psychological Reports, 48, 611-614.

Cartledge, G., & Milburn, J. F. (1980). Selecting social skills. In G. Cartledge & J. F. Milburn (Eds.), Teaching social skills to children: Innovative approaches (pp. 31-47). New York: Pergamon Press.

Chelune, G. J. (1976). A multidimensional look at sex and target differences in disclosure. Psychological Reports, 39, 259-263.

Combs, M. L., & Slaby, D. A. (1973). Social skills training with children. In B. B. Lahey & A. E. Kazdin (Eds.), Advances in clinical child psychology (Vol. I, pp. 160-183). New York: Plenum Press.

Comrey, A. L. (1978). Common methodological problems in factor analytic studies. Journal of Consulting and Clinical Psychology, 46, 648-659.

Coyne, R. K. (1982). Two critical issues in primary prevention: What it is and how to do it. Personnel and Guidance Journal, 61, 331-334.

Crandall, J. E. (1975). A scale for social interest. Journal of Individual Psychology, 31, 187-195.

Crandall, J. E. (1978). Social interest: A reply to Bickhard and Ford and an alternative formulation. Journal of Individual Psychology, 34, 11-26.

Crandall, J. E. (1980). Adler's concept of social interest: Theory, measurement and implications for adjustment. Journal of Personality and Social Psychology, 39, 481-495.

Crandall, J. E., & Kytonen, J. A. (1980). Sex, age, and stress as moderators for the relation between social interest and well-being. Journal of Individual Psychology, 36, 169-182.

Crandall, J. E., & Lehman, R. E. (1977). Relationships of stressful life events to social interest, locus of control, and psychological adjustment. Journal of Consulting and Clinical Psychology, 45, 1208.

Crandall, J. E., & Putnam, E. L. (1980). Relations between measures of social interest and psychological well being. Journal of Individual Psychology, 36, 156-168.

Crandall, J. E., & Reimanis, G. (1976). Social interest and time orientation, childhood memories, adjustment and crime. Journal of Individual Psychology, 32, 203-211.

Cunnngham, J. A., & Strassberg, D. S. (1981). Neuroticism and disclosure reciprocity. Journal of Counseling Psychology, 28, 455-458.

Currant, E. F., Dickson, A. C., Anderson, H. N., & Faulkender, P. J. (1979). Sex role stereotyping and assertive behavior. Journal of Psychology, 101, 223-228.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. Journal of Personality and Social Psychology, 44, 113-126.

DeBoer, G. E., & Hayes, R. L. (1982). The human service educator: A collaboration model for counselors and teachers. Personnel and Guidance Journal, 61, 77-80.

DeGregorio, E., & Carver, C. S. (1980). Type A behavior patterns, sex-role orientation and psychological adjustment. Journal of Personality and Social Psychology, 39, 286-293.

Dell, D. M., & Schmidt, L. D. (1971). Behavioral cues to counselor expertness. Journal of Counseling Psychology, 18, 554-561.

Downie, N. M., & Heath, R. W. (1965). Basic statistical methods (2nd Ed). New York: Harper & Row.

Evanoski, P. J. (1979). The relation of sex role definition to the effectively functioning personality. Dissertation Abstracts International, 39 (8-B), 4006. (University Microfilms No. 7824082)

Falbo, T. (1977). Relationships between sex, sex role, and social influence. Psychology of Women Quarterly, 2, 62-72.

Flaherty, J. F., & Dusek, J. B. (1980). An investigation of the relationship between psychological androgyny and components of self-concept. Journal of Personality and Social Psychology, 38, 984-992.

Flavell, J.H., & Ross, L. (Eds.) (1981). Social cognitive development: Frontiers and possible futures. Cambridge: Cambridge University Press.

Fleming, J. S., & Watts, W. A. (1980). The dimensionality of self-esteem: Some results from a college sample. Journal of Personalilty and Social Psychology, 39, 921-929.

Foote, N. N., & Cottrell, L. S. (1955). Identity and interpersonal competence: A new direction in family research. Chicago: University of Chicago Press.

Ford, M. (1982). Competence: Current conceptual and empirical status and implications for mental health. Unpublished manuscript, Stanford University, Palo Alto, CA.

Ford, M. (1983). Androgyny as self-assertion and integration: Implications for pyschological and social competence. Manuscript submitted for publication.

Ford, M., & Tisak, M. S. (1983). A further search for social intelligence. Journal of Educational Psychology. 75, 197-206.

Forness, S. R., Thornton, R. L., & Horton, A. A. (1981). Assessment of applied academic and social skills. Education and Training of the Mentally Retarded, 16, 104-109.

Fretz, B. R., Corn, R., Tuemmler, J. M., & Bellet, W. (1979). Counselor non-verbal behaviors and client evaluations. Journal of Counseling Psychology, 26, 304-311.

Friedman, H. S., Prince, L. M., Riggio, R. E., & DiMatteo, M. R. (1980). Understanding and assessing non-verbal expressiveness: The Affective Communication Test. Journal of Personality and Social Psychology, 39, 333-351.

Gambrill, E. D., & Richey, C. (1975). An assertion inventory for use in assessment and research. Behavior Therapy, 6, 550-561.

Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. New York: Harper and Row.

Garmezy, N., Masten, A., Nordstrom, L., & Ferrarese, M. (1979). The nature of competence in normal and deviant children. In M. Kent & J. Rolf (Eds.), Social competence in children (pp. 64-81). Hanover, NH: University Press of New England.

Garnets, L. D. (1978). Sex role strain analysis: Effects of sex role discrepancy and sex role salience on adjustment. Dissertation Abstracts International, 39, (10-B), 5064. (University Microfilms No. 7907078)

Gerdeman, E. M. (1975). The contribution of social intelligence to predicting accuracy of interpersonal perception. Dissertation Abstracts International, 36, (1-B), 470. (University Microfilms No. 75-14509)

Gerson, A. C., & Perlman, D. (1979). Loneliness and expressive communication. Journal of Abnormal Psychology, 88, 258-261.

Gilberstadt, H., Lushene, R., & Buegel, B. (1976). Automated assessment of intelligence: The Topac tack battery and computerized report writing. Perceptual and Motor Skills, 43, 627-635.

Gladwin, T. (1957). Social competence and clinical practice. Psychiatry, 30, 30-43.

Glass, D. C. (1977). Behavior patterns, stress, and coronary disease. Hillsdale, NJ: Erlbaum.

Goodyear, R. K., & Ribovits, J. J. (1982). Parent education: A model for low-income parents. Personnel and Guidance Journal, 60, 409-412.

Gough, H. G. (1966). Appraisal of social maturity by means of the CPI. Journal of Abnormal Psychology, 71, 189-195.

Greever, K. B., Tseng, M. S., & Friedland, B. V. (1973). Development of the Social Interest Index. Journal of Consulting and Clinical Psychology, 41, 454-458.

Haase, R. F., & Tepper, D. T. (1978). Non-verbal components of empathic communication. Journal of Counseling Psychology, 19, 417-424.

Hall, J. A. (1979). Gender, gender roles and non-verbal communication skills. In R. Rosenthal (Ed.), Skill in non-verbal communication: Individual differences (pp. 131-156). Cambridge, MA: Oegeschalager, Gunn & Hann, Publishers.

Helmreich, R., & Stapp, J. (1974). Short forms of the Texas Social Behavior Inventory (TSBI): An objective measure of self-esteem. Bulletin of the Psychonomic Society, 4, 473-475.

Helmreich, R., Stapp, J., & Ervin, C. (1974). The Texas Social Behavior Inventory (TSBI): An objective measure of self-esteem or social competence. Catalog of Selected Documents in Psychology, 4, 79, MS 681.

Heilbrun, A. B. (1976). Measurement of masculinity and femininity sex role identities as independent dimensions. Journal of Consulting and Clinical Psychology, 44, 183-190.

Hjelle, L. A. (1975). Relationship of social interest to internal-external control and self-actualization in young women. Journal of Individual Psychology, 31, 171-174.

Hollandsworth, J. G. (1976). Further investigation of the relationship between expressed social fear and assertiveness. Behavior Research and Therapy, 14, 85-87.

Hoffman, M. L. (1977). Empathy: Its development and prosocial implications. In C. B. Keasey (Ed.), Nebraska symposium on motivation (Vol. 25, pp. 169-217). Lincoln: University of Nebraska Press.

Horowitz, L. M., & French, R. (1979). Interpersonal problems of people who describe themselves as lonely. Journal of Consulting and Clinical Psychology, 47, 762-764.

Horowitz, L. M., French, R., & Anderson, C. A. (in press). The prototype of a lonely person. In L. A. Peplau & D. Perlman (Eds.), Loneliness: A sourcebook of current theory, research and therapy. New York: Wiley-Interscience.

Inkeles, A. (1969). Social structure and socialization. In D. A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: Rand McNally.

Isenhart, M. W. (1978). An investigation of differential ability in decoding non-verbal cues of emotional meaning. Dissertation Abstracts International, 39, (4-A), 1925. (University Microfilms No. 7818651)

Jones, W. H., Freemon, J. E., & Goswick, R. A. (1981). The persistence of loneliness: Self and other determinants. Journal of Personality, 49, 27-48.

Jones, W. H., Hobbs, S. A., & Hockenbury, D. (1982). Loneliness and social skills deficits. Journal of Personality and Social Psychology, 42, 682-689.

Kaplan, H. B. (1978). The relationship of social interest to cooperative behavior. Journal of Individual Psychology, 34, 36-39.

Kaul, T. J., & Schmidt, L. D. (1971). Dimensions of interviewer trustworthiness. Journal of Counseling Psychology, 18, 542-548.

Keating, D. K. (1978). A search for social intelligence. Journal of Educational Psychology, 70, 218-233.

Kelly, J. A. (1982). Social skills training: A practical guide for interventions. New York: Springer Publishing Co.

Kelly, J. A., Furman, W., & Young, V. (1978). Problems associated with the typological measurement of sex roles and androgyny. Journal of Consulting and Clinical Psychology, 46, 1574-1576.

Kelly, J. A., O'Brien, G. C., & Hosford, R. (1981). Sex roles and social skills consideration for interpersonal adjustment. Psychology of Women Quarterly, 5, 758-766.

Kelly, J. A., O'Brien, G. C., Hosford, R., & Kinsinger, E. (1975, December). Sex roles as social skills: A behavioral analysis of masculinity, femininity and psychological androgyny. Paper presented at the meeting of the Association for Advancement of Behavior Therapy, New York.

Kelly, J. A., & Worrell, J. (1977). New formulations of sex roles and androgyny: A critical review. Journal of Consulting and Clinical Psychology, 42, 155-162.

Kerlinger, F. S. (1973). Foundations of behavioral research (2nd ed., p. 43). New York: Holt, Rinehart and Winston, Inc..

Kim, J. (1975). Factor analysis. In N. H. Nie, C. H. Hull, J. G. Jenkins, K. Steinbrenner, & D. H. Bent (Eds.). Statistical package for the social sciences (2nd ed., pp. 468-514). New York: McGraw-Hill.

Kimlicka, V. M., Wakefield, J. A., & Friedman, A. F. (1980). Comparision of factors from the Bem Sex Role Inventory for male and female college students. Psychological Reports, 46, 1011-1017.

Kokenes, B. (1973). A factor analytic study of the Coopersmith Self-Esteem Inventory. Dissertation Abstracts International, 34, (8-A, Pt. 1), 4877. (University Microfilms No. 74-2800)

Koslowsky, M., & Levett, C. (1975). Intellectual functioning in a sample of institutionalized narcotic addicts. Journal of Clinical Psychology, 31, 578-582.

LaCrosse, M. B. (1975). Non-verbal behavior and perceived counselor attractiveness. Journal of Counseling Psychology, 22, 563-566.

Langer, E. J., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged: A field experience in an institutional setting. Journal of Personality and Social Psychology, 34, 191-198.

Lawson, J. S., Marshall, W. L., & McGrath, P. (1979). The Social Self-Esteem Inventory. Educational and Psychological Measurement, 39, 803-811.

Lazarus, A. A. (1966). Behavioral rehearsal vs non-directive therapy vs advice in effecting behavior change. Behavior Research and Therapy, 4, 209-212.

Lubinski, D., Tellegren, A., & Butcher, J. N. (1981). The relationship between androgyny and subjective indicators of emotional well-being. Journal of Personality and Social Psychology, 40, 722-730.

Lubinski, D., Tellegren, A., & Butcher, J. N. (1983). Masculinity, femininity, and androgyny viewed and assessed as distinct concepts. Journal of Personality and Social Psychology, 44, 428-439.

Marlowe, H. A. (1982). Social skills training with psychiatric clients: A summarization of the literature, 1962-1981. Unpublished manuscript.

Marlowe, H. A., & Bedell, J. R. (1982). Social intelligence: Further evidence for the independence of the construct. Psychological Reports, 51, 461-462.

Marlowe, H. A., & Weinberg, R. B. (1983a). The Social Skills Survey: Construction and validation of the survey. Unpublished manuscript.

Marlowe, H. A., & Weinberg, R. B. (Eds.) (1983b). Primary prevention of mental illness: Fact or fallacy. Tampa, FL: University of South Florida.

Marlowe, H. A., Weinberg, R. B., & Hall, H. (1983a). [The structure of social competence; self-efficacy and social skill domains]. Unpublished raw data.

Marlowe, H. A., Weinberg, R. B., & Prange, M. (1983b). [Androgyny and social intelligence]. Unpublished raw data.

Marsh, H. W., & Smith, I. D. (1982). Multitrait-multimethod analyses of two self-concept instruments. Journal of Educational Psychology, 74, 430-440.

Marx, R. W., & Winne, P. H. (1978). Construct interpretations of three self-concept inventories. American Educational Research Journal, 15, 99-108.

McReady P. B. (1982, August 2). The key to the future. U.S. News and World Report, 93, 69.

Meichenbaum, D., Butler, L., & Gruson, L. (1981). Toward a conceptual model of social competence. In J. D. Wine & M. D. Smye (Eds.), Social competence (pp. 37-53). New York: Guilford.

Mitchell, T. R. (1974). Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological, and empirical appraisal. Psychological Bulletin, 81, 1053-1077.

Monge, R. H. (1973). Developmental trends in factors of adolescent self-concept. Developmental Psychology, 8, 382-393.

Monge, R. H. (1975). Structure of the self-concept from adolescence through old age. Experimental Aging Research, 1, 281-291.

Moss, F. A., Hunt, T., Omwake, K. T., & Ronning, M. M. (1927). Social Intelligence Test. Washington, DC: Center for Psychological Services.

Motowidlo, S. J. (1981). Construct validity for a measure of generalized expectancy of task success. Educational and Psychological Measurement, 41, 963-972.

Mozdzierz, G. J., & Semyck, R. W. (1980a). Relationship between alcoholics social interest and attitude toward success and failure. Journal of Individual Psychology, 36, 61-65.

Mozdzierz, G. J., & Semyck, R. W. (1980b). The Social Interest Index: A study of construct validity. Journal of Clinical Psychology, 36, 417-422.

Nevill, D. (1977). Sex-roles and personality correlates. Human Relations, 30, 751-759.

Newman, E. H. (1977). Resolution of inconsistent attitude communication in normal and schizophrenic subjects. Journal of Abnormal Psychology, 86, 41-46.

Nichols, K. A. (1974). Severe social anxiety. British Journal of Medical Psychology, 47, 301-306.

Nix, J., Lohr, J. M., & Stauffacher, R. (1980). Relationship of sex, sex role orientation and self-report measure of assertiveness in college students. Psychological Reports, 47, 1239-1244.

Nystol, M. S. (1976). Identification and movement within three levels of social interest. Journal of Individual Psychology, 32, 55-61.

O'Connor, K., Mann, D. W., & Bardwick, J. M. (1978). Androgyny and self-esteem in the upper-middle class: A replication of Spence. Journal of Consulting and Clinical Psychology, 46, 1168-1169

O'Malley, J. M. (1977). Research perspective on social competence. Merrill-Palmer Quarterly, 23, 29-44.

O'Sullivan, M., & Guilford, J. P. (1975). Six factors of behavioral cognition: Understanding other people. Journal of Educational Measurement, 12, 255-271.

Paloutzian, R. F., Jackson, S. L., & Crandall, J. E. (1978). Types of Christian belief system and conversion experience as related to purpose in life, social interest, religious orientation, and dogmatism. Journal of Psychology and Theology, 6, 266-275.

Parks, A. (1971). The relationship between perceived adjustment and the self-esteem and social interest of adolescents following parental separation or divorce. Unpublished manuscript, Bowie State College Library, Bowie, MD.

Popham, W. J. (1967). Educational statistics: Uses and interpretation. New York: Harper & Row.

Popper, K. (1972). Objective knowledge. Cambridge: Cambridge University Press.

Puglisi, J. T. (1978). Equating the social desirability of the Bem Sex-Role Inventory masculinity and femininity subscales. Journal of Personality Assessment, 44, 272-276.

Puglisi, J. T., & Jackson, D. W. (1980-81). Sex role identity and self-esteem in adulthood. International Journal of Aging and Human Development, 12, 129-138.

Rathjen, D. P. (1980). An overview of social competence. In D. P. Rathjen & J. P. Foreyt (Eds.), Social competence: Interventions for children and adults (pp. 1-23). New York: Pergamon Press.

Rodriguez, R., Nietzel, M. T., & Berzins, J. I. (1980). Sex role orientation and assertiveness among female college students. Behavior Therapy, 11, 353-366.

Rosenthal, R., Hall, J. DiMatteo, D., Rogers, P., & Archer, D. (1979). Measuring sensitivity to non-verbal communication: The PONS Test. Baltimore, MD: Johns Hopkins Press.

Rotheram, M. J. (1980). Social skills training programs in elementary and high school classrooms. In D. P. Rathjen & J. P. Foreyt (Eds.), Social competence: Interventions for children and adults (pp. 69-112). New York: Pergamon Press.

Sarason, B. R. (1981). The dimensions of social competence: Contributions from a variety of research areas. In J. D. Wine & M. D. Smye (Eds.), Social competence (pp. 100-124). New York: Guilford.

Schonfield, W., & Balian, L. (1959). A comparative study of the personal histories of schizophrenic and nonpsychiatric patients. Journal of Abnormal Psychology, 59, 215-225.

Schulz, R., & Hanusa, B. H. (1978). Long-term effects of control and predictability-enhancing interventions: Findings and ethical issues. Journal of Personality and Social Psychology, 36, 1194-1201.

Schwartz, R. M., & Gottman, J. M. (1976). Toward a task analysis of assertive behavior. Journal of Consulting and Clinical Psychology, 44, 910-920.

Seligman, L. (1975). Skin potential as an indicator of emotion. Journal of Counseling Pyschology, 22, 489-493.

Shavelson, R. J., & Bolus, R. (1982). Self-concept: The interplay of theory and methods. Journal of Educational Psychology, 74, 3-17.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretation. Review of Educational Research, 46, 407-441.

Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The Self-Efficacy Scale: Construction and validation. Psychological Reports, 51, 663-671.

Shipley, W. C. (1940). A self-administering scale for measuring intellectual impairment and deterioration. Journal of Psychology, 9, 371-377.

Shumsky, P. J. (1980). Sex-role identification and relationship satisfaction. Dissertation Abstracts International, 41 (12B), 4749. (University Microfilms No. 8110160).

Sines, L. K. (1958). Intelligence test correlates of Shipley-Hartford performance. Journal of Clinical Psychology, 14, 399-404.

Smith, A. (1759). Theory of moral sentiments. London: A. Miller.

Smith, M. D. (1966). Explorations in competence: A study of Peace Corps teachers in Ghana. American Psychologist, 21, 556-566.

Smith-Hanen, S. S. (1977). Effects of non-verbal behaviors on judged levels of counselor warmth and empathy. Journal of Counseling Psychology, 24, 87-91.

Solano, C. H., & Batten, P. G. (1977, August). Loneliness and objective self-disclosure in an acquaintainship exercise. Paper presented at the meeting of the American Psychological Association, New York.

Spence, J. T., & Helmreich, R. L. (1978). Masculinity and femininity: Their psychological dimensions, correlates and antecedents. Austin: University of Texas Press.

Spence, J. T., Helmreich, R. L., & Stapp, J. (1974). The Personal Attributes Questionnaire: A measure of sex role stereotypes and masculinity-femininity. Catalog of Selected Documents in Psychology, 4, 43, (MS No. 617).

Spencer, H. (1870). The principles of psychology. London: Williams and Norgate.

Strickler, L. J. (1982). Interpersonal Competence Instrument: Development and preliminary findings. Applied Psychological Measurement, 6, 69-81.

Strong, S. R., Taylor, R. G., Bratten, J. C., & Lopez, R. G. (1971). Non-verbal behavior and perceived counselor characteristics. Journal of Counseling Psychology, 18, 554-561.

Thorndike, E. L. (1920). Intelligence and its uses. Harper's Magazine, 140, 227-235.

Thorndike, R. L. (1936). Factor analysis of social and abstract intelligence. Journal of Educational Psychology, 27, 231-233.

Trower, P. E. (1982). Toward a generative model of social skills: A critique and synthesis. In J. P. Curran & P. M. Monti (Eds.), Social skills training (pp. 399-428). New York: Guilford.

Trower, P. E., Bryant, B., & Argyle, M. (1978). Social skills and mental health. Pittsburgh: University of Pittsburgh Press.

Twentyman, C. T., & Zimering, R. T. (1979). Behavioral training of social skills: A critical review. In M. Hersen, A. Bellack & P. Miller (Eds.), Progress in Behavior Modification (Vol. 7, pp. 319-400). New York: Academic Press.

Tyler, F. B. (1978). Individual psychosocial competence: A personality configuration. Educational and Psychological Measurement, 38, 309-323.

Unger, R. K. (1979). Toward a redefinition of sex and gender. American Psychologist, 34, 1085-1094.

VanTuinen, M., & Ramanaiah, N. V. (1979). A multimethod analysis of selected self-esteem measures. Journal of Research in Personality, 13, 16-24.

Walker, R.E., & Foley, J. M. (1973). Social intelligence: Its history and measurement. Psychological Reports, 33, 451-459.

Watkins, D. (1978). The development and evaluation of self-esteem measuring instruments. Journal of Personality Assessment, 42, 171-182.

Wetter, R. E. (1979). The convergence of sex role measurement and the Wiggins' Interpersonal Behavior Circle. Dissertation Abstracts International, 40 (6-B), 2909. (University Microfilms No. 7927730)

White, R. C. (1959). Motivation reconsidered: The concept of competence. Psychological Review, 66, 297-333.

White, R. C. (1974). Strategies of adaptation: An attempt at systematic description. In G. V. Coehlo, D. A. Hamburg & J. E. Adams (Eds.), Coping and Adaptation (pp. 35-53). New York: Basic Books, Inc.

Wiggins, J. S., & Holzmuller, A. (1978). Psychological androgyny and interpersonal behavior. Journal of Consulting and Clinical Psychology, 46, 40-52.

Wilber, C. F. (1977). An investigation of the relationship among sex role identification, psychological adjustment and other selected variables for students and workers. Dissertation Abstracts International, 38 (5-A), 2571. (University Microfilms No. 77-24045)

Williams, C. L. (1981). Assessment of social behavior: Behavioral role play compared with the Si scale of the MMPI. Behavior Therapy, 6, 550-561.

Wine, J. D. (1981). From defect to competence models. In J. D. Wine & M. D. Smye (Eds.), Social competence (pp. 3-35). New York: Guilford.

Wrubel, J., Benner, P., & Lazarus, R. S. (1981). Social competence from the perspective of stress and coping. In J. D. Wine & M. D. Smye (Eds.), Social competence (pp. 61-91). New York: Guilford.

Zarski, J. J., Sweeney, T. J., & Barcikowski, R. J. (1977). Counseling effectiveness as a function of counselor social interest. Journal of Counseling Psychology, 24, 1-5.

Zigler, E., & Trickett, P. K. (1978). IQ, social competence and evaluation of early childhood intervention programs. American Psychologist, 33, 789-798.

Zimbardo, P. G. (1977). Influencing attitudes and changing behavior: An introduction to method, theory and applications of social control and personal power. In P. G. Zimbardo (Ed.), Topics in social psychology (pp. 2-7). New York: A and W Publishers.

Zuckerman, M., DeFrank, R. S., Spiegel, N. H., & Larrance, D. T. (1982). Masculinity-femininity and encoding of non-verbal cues. Journal of Personality and Social Psychology, 42, 548-556.

Zuckerman, M., & Larrance, D. T. (1979). Individual differences in perceived encoding and decoding abilities. In R. Rosenthal (Ed.), Skill in non-verbal communication: Individual differences (pp. 170-195). Cambridge, MA: Oelgeschlager, Gunn & Hain, Publishers, Inc.

BIOGRAPHICAL SKETCH

Herbert A. Marlowe, Jr. was born in Gainesville, Florida, in 1946. He is a fifth generation Floridian and was educated in the public schools of Alachua County. His college degrees (B.A.E., high honors, 1968; M.E., 1974; Ed.S., 1974) are all from the University of Florida.

He is married to Jeannie Lea Marlowe and has two children, Louisa, age 12, and Jordan, age 7. They live on a horse and cattle farm south of Newberry. His research interests are in social intelligence and occupational stress. His other interests include farming, real estate development, reading, writing, jogging and horse riding.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Bert L. Sharp, Ed.D., Chairman
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Larry Loesch, Ph.D.
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Benjamin Barger, Ph.D.
Professor of Clinical Psychology

This dissertation was submitted to the Graduate Faculty of the Department of Counselor Education in the College of Education and the Graduate School, and was accepted for partial fulfillment of the requirements of the degree of Doctor of Philosophy.

April, 1984

Dean for Graduate Studies and Research